UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

AUG 06 2015

Mr. Todd Musser
Environmental Services Manager
Altoona Water Authority
Wastewater Treatment Operations
144 Westerly Treatment Plant Road
Duncansville, Pennsylvania 16635-7814

Re: Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Musser:

I am pleased to approve modifications to the local limits of the Altoona pretreatment program in accordance with the General Pretreatment Regulations (40 C.F.R. 403). Since none of the local limits was made less stringent than the previous limits, no public notice of this action by EPA was required. A listing of the documents included in this approval is enclosed.

The U. S. Environmental Protection Agency's General Pretreatment Regulations describe the local pretreatment responsibilities based on the Clean Water Act. The pretreatment program that the Authority implements must be consistent with these regulations and your approved program.

If this Agency can be of any assistance to you in administering this program, please contact John Lovell at 215-814-5790.

Sincerely,

David B. McGuigan, Ph.D.
Associate Director
Office of NPDES Permits and Enforcement
Water Protection Division

Enclosure

cc: Maria Bebenek, PADEP Southcentral Region (w/enclosure)
Ron Furlan, PADEP Central Office (w/enclosure)

Documents Included in Pretreatment Program Modification Approval

- Altoona Water Authority Resolution #15-04-790, adopted April 23, 2015.
- Altoona Easterly and Altoona Westerly Local Limits Calculations Spreadsheets dated January 23, 2015.

GD&F
GWIN
DOBSON &
FOREMAN
CONSULTING ENGINEERS

June 29, 2015

Mr. John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division
US Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

RE: Altoona Water Authority - Pretreatment Program
NPDES Nos. PA0027014 and PA 0027022

Dear Mr. Lovell:

The Altoona Water Authority formally adopted their proposed local limits at their April 23, 2015 Board meeting. A copy of the Resolution (No. 15-04-790) is attached for your review. Adoption by the contributing municipalities is not necessary since both Logan and Allegheny Townships have deferred the responsibility of establishing local limits to the Authority.

If you have any questions or need additional information, please contact us at your convenience.

Respectfully submitted,
GWIN, DOBSON & FOREMAN, INC.

James L. Balliet
Director of Facilities Planning

Enclosures
JLB/mad
13038/ltr/US EPA_Pretreatment_6-29-15.doc
cc: Ryan Beasom, Altoona Water Authority
Mark Perry, Altoona Water Authority
File

3121 FAIRWAY DRIVE ALTOONA, PA 16602 814.943.5214 FAX 814.943.8494 WWW.GDFENGINEERS.COM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JAN 29 2015

Mr. Todd Musser
Environmental Services Manager
Altoona Water Authority
Wastewater Treatment Operations
144 Westerly Treatment Plant Road
Duncansville, Pennsylvania 16635-7814

Re: Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Musser:

I have completed review of the revisions to the Authority's local limits reevaluation submitted by your consultant, Mr. James Balliet, on January 22, 2015. Based on this review, the proposed revisions to the local limits are acceptable. Enclosed for your use are two tables showing the influent, effluent, and sludge goals for each of the Authority's treatment plants based on the reevaluation, along with the loadings and removals used to develop the goals. These goals will be used in the evaluation of the monitoring data submitted with future annual reports. In addition, the tables show the monitoring frequency for each pollutant. A monitoring frequency of "4" for the influent, effluent, and sludge generally means that the Authority has proposed a local limit for that pollutant. An influent and sludge monitoring frequency of "1" and an effluent monitoring frequency of "0" indicates a pollutant that is a priority pollutant and for which a maximum allowable headworks loading was calculated, but for which no limit was proposed. A monitoring frequency of "0" for all sampling points indicates a pollutant that is not a priority pollutant but for which an evaluation was done and no limit was proposed. Please note that for BOD_5, total suspended solids, ammonia, phosphorus, and nitrogen the monitoring frequency is listed as "4" for the influent and "0" for the effluent and sludge. This pollutant has a proposed limit, but we will be using the DMR data submitted by the Authority to track the effluent data.

Since none of the proposed local limits are less stringent than the currently approved local limits, the revision to the limits is not considered a substantial program modification under 40 CFR 403.18(b)(2). However, prior to formal approval by EPA, the proposed limits will need to be adopted by the Authority and the contributing municipalities. Adoption by the contributing municipalities may not be necessary if the municipal ordinances have been previously revised to delegate the power to establish limits to the Authority, or if the Authority's solicitor has previously submitted a statement certifying that the Authority has the ability to implement and enforce its pretreatment program based solely on its regulations, and that statement was accepted by EPA. Based on our file, it appears that the Authority's treatment plant serves the Townships of Allegheny and Logan and the new limits will need to be adopted by both of these Townships as well as the Authority. If this is not your understanding, please let me know.

In addition, please note that the Authority's NPDES permits, both issued on January 29, 2008, require that the Authority adopt the revised limits within six months of acceptance by EPA (this letter). The NPDES permit also requires that, if necessary, the Authority notify its contributing municipalities of the need to adopt the revised limits within the same six month period. After receipt of copies of the adopted limits for the Borough and all of the contributing municipalities, EPA can proceed with the formal approval of the limits.

The Authority should quickly proceed with the adoption of the revised limits. To demonstrate compliance with the NPDES permit, it is recommended that the Authority submit a copy of the ordinance adopting the limits within the six month time frame as well as any letters to the contributing municipalities that are necessary asking for adoption of the limits. If the Authority believes that the contributing municipalities are not required to adopt the limits, an explanation for the Authority's position should be provided as soon as possible.

Please provide a copy of the adopted ordinances when they are available. If you have any questions regarding this matter, please contact me at 215-814-5790.

Sincerely,

John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division

Enclosures

cc: James Balliet, Gwin, Dobson & Foreman (w/enclosures)
Maria Bebenek, PADEP Southcentral Region (w/out enclosures)
Ron Furlan, PADEP Central Office (w/out enclosures)

Lovell, John

From: Lovell, John
Sent: Thursday, January 29, 2015 2:10 PM
To: 'jim l. balliet'
Cc: James K. Baird; Musser, Todd
Subject: RE: Altoona Water Authority - Local Limit Revisions
Attachments: Altoona East.xls; Altoona West.xls; Altoona East Effluent Goals.pdf; Altoona East Influent Goals.pdf; Altoona West Effluent Goals.pdf; Altoona West Influent Goals.pdf

Categories: EZ Record - Shared

I looked over the revisions to the reevaluation and they look good. I'll get a letter out accepting the submission as well as outlining the approval process. I've also attached revised spreadsheets for reporting the influent, effluent, and sludge data for both plants with the annual report. The goals are based on the calculations in your spreadsheet, and I've also attached some tables showing the loadings and removal rates used to calculate the goals. The goals in the attached spreadsheets should be the same as the goals shown in Tables 21 and 22 of your spreadsheets. Note that while we will use these goals to evaluate the 2014 influent, effluent, and sludge data submitted in March, the quarterly monitoring for the pollutants that you've proposed new limits for only kicks in for 2015.

If you have any questions, let me know.

John Lovell
Pretreatment Coordinator
USEPA Region 3
1650 Arch Street
Philadelphia, PA 19103-2029
215-814-5790
215-814-2318 (fax)

From: jim l. balliet [mailto:jballiet@GDFEngineers.com]
Sent: Thursday, January 22, 2015 2:31 PM
To: Lovell, John
Cc: James K. Baird; Musser, Todd
Subject: Altoona Water Authority - Local Limit Revisions

Hi John,

Please find attached our response to your November 20, 2014 comments regarding Altoona's local limit calculations. Also attached are the revised spreadsheets for both the Easterly and Westerly facilities. I sent a hard copy of the letter and spreadsheets in the mail today.

Please review these changes and let me know if you have any further questions. I hope we are finally on the home stretch to get these approved.

Thanks for all your assistance.

Jim.

James L. Balliet

Director of Facilities Planning
Corporate Secretary
GWIN, DOBSON & FOREMAN, INC.
3121 Fairway Drive
Altoona, PA 16602
PH: 814.943.5214
FAX: 814.943.8494
EMAIL: *jballiet@gdfengineers.com*

GD&F
GWIN
DOBSON &
FOREMAN
CONSULTING ENGINEERS

RECEIVED
EPA REGION III
JAN 2 7 2015
NPDES PERMITS BRANCH
(3WP41)

January 22, 2015

Mr. John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division
US Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

RE: Altoona Water Authority - Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Lovell:

Please accept this letter in response to your letter to Mr. Ryan Beasom, Environmental Services Manager of the Altoona Water Authority dated November 20, 2014. Gwin, Dobson & Foreman, Inc. (GD&F) offers the following responses to your comments.

Easterly Treatment Plant

GD&F has updated and revised the Excel Spreadsheets(Revision 7) based on your comments as follows:

The following data points were eliminated from the respective data sets:

1. Arsenic influent: 2/11/14 (0.0142 mg/l)
2. Arsenic effluent: 2/11/14 (0.0081 mg/l)
3. Copper effluent: 2/14/12 (0.03 mg/l)
4. Mercury sludge: 9/21/11 (0.403 mg/kg
5. Zinc effluent: 12/11/14 (< 0.002 mg/l) and 5/20/14 (< 0.00035 mg/l)
6. Ethyl benzene influent: 11/22/10 (0.00596 mg/l)
7. Ethyl benzene effluent: 11/9/10 (< 0.002 mg/l)
8. Toluene influent: 5/20/14 (0.00485 mg/l)
9. Nitrogen influent: 8/5/10 (1 mg/l)

The following data points previously eliminated, are no longer eliminated from the respective data sets:

1. Arsenic influent: 12/11/13 (0.00972 mg/l)
2. Toluene effluent: 5/20/14 (0.04 mg/l)
3. PCBs effluent: 5/20/14 (< 0.00002629 mg/l; entered as one of the detection limit 0.000013145 mg/l)
   Note: now the spreadsheet has made the font red as an outlier.

The Authority will start collecting nonindustrial samples for copper, selenium, and zinc when the quarterly influent, effluent, and sludge samples are collected.

The lead removal was calculated in Table 3 of the spreadsheet using the calculated influent/effluent removal value of 86.06%. The inhibition removal calculations via primary treatment for benzene and ethyl benzene were set to zero, which was an oversight on our part.

The proposed local limits were adjusted to meet or be below the calculated local limits by the spreadsheet, with the exception of selenium. The Authority will follow your recommendation to maintain the existing selenium limit of 0.04 mg/l on an interim basis, and conduct additional sampling for selenium to determine its source. The toluene limit will be maintained in the local limits as the potential for future groundwater remediation treatment sites in the collection system is possible.

Westerly Treatment Plant

GDF has updated and revised the Excel Spreadsheets (Revision 7) based on your comments as follows:

The following data points were eliminated from the respective data sets:

1. Arsenic influent: 12/12/12 (0.00351 mg/l) and 12/11/13 (0.00325 mg/l)
2. Arsenic effluent: 12/11/13 (0.00447 mg/l) and 2/11/14 (0.00378 mg/l)
3. Antimony influent: 9/22/09 (0.00429 mg/l) and 11/19/10 (< 0.005 mg/l)
4. Antimony effluent: 11/19/10 (< 0.005 mg/l) and 8/21/13 (< 0.00454 mg/l).

The following data points previously eliminated, are no longer eliminated from the respective data sets:

1. Nickel influent: 8/12/10 (0.008 mg/l) and 8/22/12 (0.009 mg/l). Note: now the spreadsheet has made the font red as an outlier.

The proposed local limits were adjusted to meet or be below the calculated local limits by the spreadsheet. Antimony analyses will be included in future sampling to evaluate the potential source(s) and develop data points. The toluene and xylene limits will be maintained in the local limits as the potential for future groundwater remediation treatment sites in the collection system is possible.

We would like to inform you that Todd Musser recently replaced Ryan Beasom as the Environmental Services Manager. Please direct all future correspondence to Todd's attention.

If you have any questions, need additional information, or if you would like to discuss, please contact Jim Baird at (814) 207-8854 or myself at (814) 943-5214.

Sincerely,
GWIN, DOBSON & FOREMAN, INC.

James L. Balliet
Facilities Planning Director

Enclosures
JLB/mad
13038/Ltr/USEPAResponse_1-22-15.doc
cc: Todd Musser, Altoona Water Authority
Jim Baird, Gwin, Dobson & Foreman (w/enclosures)

Lovell, John

From: jim l. balliet <jballiet@GDFEngineers.com>
Sent: Thursday, January 22, 2015 2:31 PM
To: Lovell, John
Cc: James K. Baird; Musser, Todd
Subject: Altoona Water Authority - Local Limit Revisions
Attachments: letter.pdf; Altoona East Submission 7.xlsx; Altoona West Submission 7.xlsx

Categories: EZ Record - Shared

Hi John,

Please find attached our response to your November 20, 2014 comments regarding Altoona's local limit calculations. Also attached are the revised spreadsheets for both the Easterly and Westerly facilities. I sent a hard copy of the letter and spreadsheets in the mail today.

Please review these changes and let me know if you have any further questions. I hope we are finally on the home stretch to get these approved.

Thanks for all your assistance.

Jim.

James L. Balliet
Director of Facilities Planning
Corporate Secretary
GWIN, DOBSON & FOREMAN, INC.
3121 Fairway Drive
Altoona, PA 16602
PH: 814.943.5214
FAX: 814.943.8494
EMAIL: *jballiet@gdfengineers.com*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

NOV 2 0 2014

Mr. Ryan Beasom
Environmental Services Manager
Altoona Water Authority
Wastewater Treatment Operations
144 Westerly Treatment Plant Road
Duncansville, Pennsylvania 16635-7800

Re: Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Beasom:

I have reviewed the Authority's most recent local limits evaluation submitted on September 3, 2014 by email by your consultant, Mr. James Balliet. Based on that review I have a few remaining comments. Enclosed are updated versions of the EPA local limits spreadsheets that reflect these changes and show the potential impact on the calculations.

Easterly Treatment Plant

With the addition of new data to the 'POTW Monitoring Data' worksheet I reevaluated the data sets since the new data can impact which data points are considered outliers. Based on this new review of the monitoring data, I recommend that the following data points be eliminated from the respective data sets because they appear to be outliers:

- arsenic influent – 2/11/14 (0.0142 mg/l)
- arsenic effluent – 2/11/14 (0.0081 mg/l)
- copper effluent – 2/14/12 (0.03 mg/l)
- mercury sludge – 9/21/11 (0.403 mg/kg)
- zinc effluent – 2/11/14 (<0.002 mg/l) and 5/20/14 (<0.00035 mg/l)
- ethylbenzene influent – 11/22/10 (0.00596 mg/l)
- ethylbenzene effluent – 11/9/10 (<0.002 mg/l)
- toluene influent – 5/20/14 (0.00485 mg/l)
- nitrogen influent – 8/5/10 (1 mg/l)

In addition, I recommend that the following data points that were eliminated by the Authority not be eliminated because they do not appear to be outliers:

- arsenic influent – 12/11/13 (0.00972 mg/l)
- toluene effluent – 5/20/14 (0.04 mg/l)
- PCBs effluent – 5/20/14 (<0.00002629 mg/l)

For both copper and zinc, two of the nonindustrial sample results have been eliminated as outliers. While this appears to be appropriate, because of the limited number of samples in each of these data sets the two eliminated samples represent a significant percentage of the total.

number of samples. While we will not ask the Authority to make changes to this submission, it is recommended that the Authority start collecting additional nonindustrial data for the next reevaluation. Collecting this data at least quarterly with the influent, effluent, and sludge data could provide the additional data.

The changes recommended above in the data result in some changes in the removal rates in Table 3 of the 'Local Limits Calculation' worksheet. In addition, based on the same rationale as used in my July 2, 2014 letter (see comments on Table 3 for the Easterly Treatment Plant from that letter), I recommend a removal for lead of 71.03%. Note that this removal is slightly different than the removal recommended in my July 2, 2014 letter based on the additional data supplied by the Authority. Note also that the Authority's use of the influent/effluent removal can be justified and since it results in a more stringent local limit could be accepted. However, as discussed in my July 2, 2014 letter, the data submitted by the Authority suggests that the maximum allowable headworks loading based on the use of the influent/effluent removal may be more stringent than needed to protect the treatment plant.

The inhibition calculations in the Authority's submission use a primary removal for benzene of 25% and a primary removal for ethylbenzene of 13%. As noted in the Authority's submission, there is no primary treatment at the plant and therefore these two removals should be set to zero. Note that changing these two removals does not change the final calculations since these removals are used only in the inhibition calculations and inhibition is not the ruling criterion for either pollutant.

Based on the changes noted above, there are some changes that will need to be made to the proposed limits, most notably for arsenic and zinc which become more stringent. In regard to selenium, the Authority proposed a limit of not detectable using a test method with a detection level of 0.002 mg/l. However, the Authority's data indicates that the background concentration is slightly higher than 0.01 mg/l and therefore user discharges at the background level would be considered violations. While the evaluation suggests that the levels of selenium in the treatment plant need to be reduced in order to protect water quality, since the Authority does not have a selenium limit in its NPDES permit it may be appropriate to maintain the existing limit (0.04 mg/l) as an interim solution while additional work is done on characterizing the industrial user discharges and determining whether additional reduction can be achieved. At the same time, the Authority should review its sampling procedures for selenium since the background levels reported by the Authority appear to be higher than background levels reported by other POTWs. It may also be appropriate to include selenium with the additional nonindustrial sampling recommended above for copper and zinc. The Authority may also want to evaluate whether any of its industrial users has a reasonable potential to discharge levels near the proposed limit for toluene (64 mg/l). If there is no potential for users to discharge near these levels it may be possible for the Authority to eliminate that limit. As part of that evaluation the Authority would need to show whether any of the users treat to reduce the levels of toluene.

Westerly Treatment Plant

For the Westerly Treatment Plant, I recommend that the following data points be eliminated from the respective data sets because they appear to be outliers:

- arsenic influent – 12/12/12 (0.00351 mg/l) and 12/11/13 (0.00325 mg/l)

- arsenic effluent – 12/11/13 (0.00447 mg/l) and 2/11/14 (0.00378 mg/l)
- antimony influent – 9/22/09 (0.00429 mg/l) and 11/19/10 (<0.005 mg/l)
- antimony effluent – 11/19/10 (<0.005 mg/l) and 8/21/13 (<0.00454 mg/l)

In addition, I recommend that the following data points that were previously eliminated not be eliminated because they no longer appear to be outliers based on the additional data provided by the Authority:

- nickel influent – 8/12/10 (0.008 mg/l) and 8/22/12 (0.009 mg/l)

These changes in the data result in some changes in the removal rates in Table 3 of the 'Local Limits Calculation' worksheet. Based on the slight change in the removal for arsenic, the calculated uniform concentration limit decreases slightly. However, since the Authority proposed to maintain the existing limit and the existing limit is more stringent than the revised calculated limit, the Authority's proposal to maintain the existing limit is acceptable although the recommended changes would result in a change in the influent goal. For both antimony and nickel, the recommended changes in the removal rate results in a less stringent calculated uniform concentration limit. Note that for antimony almost all of the influent, effluent, and sludge data are reported as non-detectable values. This means that the calculated removal rate is based mainly on the differences in the detection levels used in the analyses rather than on an actual measured removal at the treatment plant. EPA also has no default removal data available for this pollutant. Since there is no existing local limit for antimony and there appear to be no significant levels found in the treatment plant, the Authority may want to consider whether a new local limit is needed for this pollutant. The Authority may also want to evaluate whether any of its industrial users has a reasonable potential to discharge levels near the proposed limits for toluene (139 mg/l) and xylene (12.4 mg/l). If there is no potential for users to discharge near these levels it may be possible for the Authority to eliminate those limits.

Please provide a response to the issues raised above. If you have any questions regarding this matter, please contact me at 215-814-5790.

Sincerely,

John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division

Enclosures

cc: James Balliet, Gwin, Dobson & Forman (w/enclosure)
Maria Bebenek, PADEP Southcentral Region (w/out enclosures)
Ron Furlan, PADEP Central Office (w/out enclosures)

Lovell, John

From: jim l. balliet <jballiet@GDFEngineers.com>
Sent: Wednesday, September 03, 2014 8:14 PM
To: Lovell, John
Cc: Beasom, Ryan; Mark Perry; Mark V. Glenn
Subject: AWA Pretreatment Update
Attachments: Altoona East Submission 6 Revised.xlsx; Altoona West Submission 6 Revised.xlsx; AWA Easterly Limits Worksheet.xlsx; AWA Westerly Limits Worksheet.xlsx; Pretreatment Program Goals 7.31.14.xlsx; US EPA_Pretreatment_9-3-14.pdf

Categories: Record Saved - Shared

Hi John,

On behalf of the Altoona Water Authority, we have prepared a response to your review letter and we have revised their local limit spreadsheets accordingly.

Please find attached the following files:

EPA Response Letter 9.3.14
Altoona West Submission 6 Revised (revised model)
Altoona East Submission 6 Revised (revised model)
AWA Westerly Limits Worksheet (comparison of limits)
AWA Easterly Limits Worksheet (comparison of limits)
Pretreatment Program Goals 7.31.14 (added updated worksheet)

Please review these and let me know if you have any questions. We appreciate your continued cooperation with the Authority and their pretreatment program.

Respectfully,

Jim.

James L. Balliet
Director of Facilities Planning
Corporate Secretary
GWIN, DOBSON & FOREMAN, INC.
3121 Fairway Drive
Altoona, PA 16602
PH: 814.943.5214
FAX: 814.943.8494
EMAIL: *jballiet@gdfengineers.com*

GD&F
GWIN
DOBSON &
FOREMAN
CONSULTING ENGINEERS

September 3, 2014

Mr. John Lovell
Pretreatment Coordinator
US EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

RE: Altoona Water Authority - Pretreatment Program
NPDES Nos. PA0027014 and PA 0027022

Dear Mr. Lovell:

The following is our response to your letter to Mr. Ryan Beasom, Environmental Services Manger of the Altoona Water Authority dated July 2, 2014. Your comments are italicized followed by our response in red font.

We have also revised the Excel Spreadsheets (Revision 6) you provided to us including the addition of the available 2014 analytical data. The proposed local limits have been revised based on your comments.

July 2, 2014 EPA Comment:

I have completed review of the Authority's local limits reevaluation submitted on June 13, 2014. Based on this review, changes will be needed to the submission prior to approval as indicated in my comments below. Enclosed is a printout of a spreadsheet (version 4.0) used to calculate local limits in which the data inputs are revised as discussed below. This printout is not intended to be used by the Authority directly, but is only included as an indication of the effect of the changes based on my comments. The comments below are presented in the order that the data is presented in the "Local Limits Calculation" spreadsheet. As shown at the bottom of the first column in the "POTW Monitoring Data" spreadsheet, green and pink shaded boxes in this spreadsheet highlight any data reported as non-detectable and indicate how those data were handled for purposes of the calculations. Grey shaded boxes highlight any data that was excluded from the data set because it did not appear to be consistent with the rest of the data set for that pollutant.

The Authority added 2012 monitoring data for the treatment plants to the previously submitted data set for the local limits development. This is appropriate to update the evaluation. However, since it is now about halfway through calendar year 2014, it is probably appropriate to also add the data from calendar year 2013 as well as any data that has been collected for calendar year 2014. The enclosed spreadsheets include the data that was submitted by the Authority with its 2013 annual pretreatment report but do not include any 2014 data since that data was not available to me.

US EPA provided their revised Excel Spreadsheets (Revision 6) to Gwin, Dobson & Foreman, Inc. (GDF). The Authority provided first and second quarter influent, effluent, and sludge data for 2014 to GDF, which was entered into these spreadsheets.

Easterly Treatment Plant

POTW Monitoring Data Spreadsheet

The data in the enclosed "POTW Monitoring Data" spreadsheet is generally the same as the data included in the Authority's submission, although as noted above, the data submitted with the Authority's 2013 annual report for the influent, effluent, and sludge was added. In addition, Authority's handling of non-detectable results was reevaluated and revised in some instances. In general, where most or all of the results for a pollutant at a given sample point are reported as non-detectable, I recommend use of half the detection limit as a surrogate. This assumes that where most or all of the results are reported as non-detectable, the actual result is likely to be well below the detection limit. Where only a few of the results for a pollutant at a given sample point are reported as non-detectable, I recommend use of the detection limit as a surrogate. This assumes that where only a few of the results are reported as non-detectable, the actual result is likely to be near the detection limit. The recommended handling of the non-detectable values is shown in the enclosed spreadsheet using pink shading to indicate use of half the detection limit in place of non-detectable values and using green shading to indicate use of the detection limit in place of non-detectable values. In the enclosed spreadsheet, changes were made to the Authority's handling of non-detectable values for the influent data for lead, mercury, selenium, and bis (2-ethylhexyl) phthalate, for the effluent data for molybdenum, nickel, and selenium, for the sludge data for PCBs, and for the nonindustrial data for molybdenum and PCBs. Note that where the data only supported use of default removals, changes to the values were usually not made since it would not impact the final evaluation.

Revisions of the spreadsheet from US EPA (Revision 6) were made and followed the same aforementioned protocol discussed above for the input of the data with non-detectable results. In addition, the removal efficiency value was deleted for influent and effluent calculations when both the influent and effluent values are non-detectable. Calculated removal efficiencies that had negative values were deleted or replaced with a value of zero.

In addition, there were a number of sample results that I eliminated from the data set. Version 4.0 of the local limits spreadsheet determines the standard deviation of the data set and highlights any value that is different than the average by more than two times the standard deviation. As suggested in the EPA local limits guidance, these values are considered to be outliers (not representative of the data set) and were eliminated from the data set (grey shaded cell with an "X" after the result). Sample results in addition to those eliminated by the Authority were eliminated using this method on the influent (arsenic, chromium, lead, mercury, molybdenum, selenium, BODs, and antimony), the effluent (arsenic, chromium, cyanide, lead, mercury, nickel, selenium, and silver), and the sludge (cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc). In addition, I reevaluated the Borough's elimination of data points using this same methodology and recommend that the Borough uses several of the values that it had eliminated from the data sets. Sample results were used based on this methodology for copper (influent and sludge), nickel (influent), zinc (influent), and PCBs (nonindustrial). Note that after elimination of data points the spreadsheet recalculates the standard deviation and reassesses the data set, but these secondary outliers were not eliminated from the data sets. I also eliminated sample results where the detection limit for non-detectable values was above the average for the pollutant and sample point (grey shaded cell with "<" before the result). This assumes that a non-detectable result should not be greater

than a majority of the detectable results. This was done for arsenic (influent - 9/21/11), cadmium (influent - 5/21/09 and 9/21/11), chromium (influent - 9/16113), silver (influent - 12/11/13), antimony (influent 2/12/13 and 5/16/13; effluent2/12/13; sludge - 9/16113), benzene (sludge - 9/16/13), PCBs (influent - 9/16/13; sludge - 9/28/12), and bis (2-ethylhexyl) phthalate (sludge 9/16/13).

GDF acknowledges and is using US EPA's recommendations.

Local Limits Calculation Spreadsheet

Table 2b - Flow and Receiving Stream Data *- The Authority used a POTW flow of 4.994 mgd and sludge flow to disposal of 1.074 dry metric tons per day. The report indicates that these flows are based on the 2008 through 2013 time frame for the POTW flow and 2013 for the sludge flow. In general, both flows should be based on data from the same time frame, and a longer-term average is more appropriate unless there is a specific reason to use a shorter time frame (e.g., significant change in flows based on service area growth). Based on the Authority's discharge monitoring report data in on our computer system I calculated the average effluent flow for the January 2008 through December 2013 time period and obtained a flow of 5.32 mgd.*

For sludge, although I did not have access to the reported sludge data for 2013, the average sludge flow for 2008 through 2012 based on the data in our computer system was 1.30 dry metric tons per day. A copy of each of the spreadsheets showing the data that I pulled from our computer system is enclosed, and the revised flows are used in the enclosed Local Limits Calculation spreadsheet. Note that for the sludge flow, the Authority should include the 2013 data that I did not have access to. In addition, based on the effluent flow data, it appears that the flow for calendar years 20 I 2 and 20 I 3 was significantly lower than the flows in the previous years. If this is because of a change in the system (e.g., elimination of some flows) it may be more appropriate to use only the flows from these two years. In any case, the Authority should verify the flows that it used in the evaluation, and ensure that all of the flows reflect the same time period. Since the Authority's evaluation does not include inhibition of anaerobic digesters, the sludge flow to the digesters is not needed.

GDF used the Authority's Chapter 94 Report data for influent flows and sludge generated. The 2012 and 2013 influent flow has been decreasing. Please see the table below:

Year	Influent Annual Flow (mgd)	Influent Organic (BOD5) (lb/day)	Sludge Flow to Digesters (mgd)
2008	4.858	3,860	
2009	5.292	4,481	
2010	5.492	4,758	
2011	6.183	4,238	
2012	4.350	3,771	
2013	3.786	3,012	0.032

The POTW flow value was changed to 4.994 mgd. We believe the Chapter 94 Report information is representative of the influent received by the wastewater treatment plant (WWTP). Since the WWTP has been upgraded with start-up in the last year, only the most recent sludge generation data was used. The Easterly WWTP utilizes thickening of the waste activated sludge following by aerobic sludge digestion.

Table 3 - NPDES Effluent Limits *-The Authority's submission indicates that the potential permit limits used in the previous evaluation were updated based on PADEP's most recent Water Quality Protection Report. It does not appear that we have a copy of that report in our files, but most of the values used by the Authority are fairly close to the values used in the previous submission and therefore appear to be appropriate. The two exceptions are cadmium and selenium. For cadmium, the Authority's spreadsheet lists the value as "?0.000445?/?0.0041 88?". Since excel handles this as a non-numeric value, no allowable headworks loading based on the NPDES "limit" is calculated in the Authority's spreadsheet. Based on the previous submission, the enclosed spreadsheet uses the 0.004188 value, but the Authority will need to review the PADEP water quality report and use the appropriate value. For selenium, the Authority's submission uses a value of 0.005536 which is an order of magnitude lower than the value used in the previous submission. The Authority should therefore review and verify this value.*

GDF was able to obtain PA DEP's Water Quality Protection Reports (WQPR) from a file review at the PA DEP's Southcentral Region Office. Unfortunately, the WQPR only contained the PENTOXSD Model output but none of the input parameters. GDF attempted to obtain the PENTOX Model from PA DEP's Permit Engineer, but was not able to obtain any information. The December 21, 2006 WQPR contains PENTOXSD results (dated 12/20/05) at a discharge flow of 8.0 mgd and an effluent cadmium limit of 4.188 ug/l. The December 21, 2006 WQPR contains PENTOXSD results (dated 12/14/06) at a discharge flow of 9.0 mgd and an effluent cadmium limit of 0.445 ug/l. Without the input parameters changing, increasing the flow from 8.0 to 9.0 mgd would not cause a change from 4.188 to 0.445 ug/l. We believe there may have been error in the input into the PA DEP's December 21, 2006 run of the PENTOXSD Model. The PA DEP determined a cadmium effluent limit was not needed when the current NPDES Permit was issued. We did not change the 4.188 ug/l value used by US EPA in the spreadsheet. If the US EPA has more updated data, please provide this information to GDF and the Authority.

Based on the changes that I made to the handling of the influent, effluent, and sludge monitoring data (see comments under "POTW Monitoring Data Spreadsheet"), the removal rates used in the local limits calculations were revised. In addition, the Authority's selection of the removal rate used in the evaluation was reviewed and revised in some cases. The recommended selection of removal rate for each pollutant is shown in the "Select Removal Efficiency" column in Table 3 of the enclosed spreadsheet. In general, where actual influent and effluent data that were not reported as non-detectable were available, a removal based on the average influent and the average effluent was selected. The enclosed spreadsheet changed the Authority's selected removal to the influent/effluent removal for copper, nickel, and selenium. Where the influent/effluent removal could not be used, a removal based on the average influent load and average sludge load was used. The enclosed spreadsheet changed the Authority's selected removal to the influent/sludge removal for chromium, silver, and antimony. Note that for molybdenum there is influent and effluent data available that could be used for calculation of a removal rate. However, use of the influent/effluent removal results in a negative local limit based on protection of sludge quality. Since the Authority's sludge monitoring data for molybdenum indicates that its sludge quality is currently well below the sludge standard, this suggests that the influent/effluent removal is not appropriate and therefore the Authority's selection of the influent/sludge removal appears appropriate. Where the influent, effluent, and sludge data could not be used to determine a removal rate, EPA's

default removal for activated sludge treatment plants was used. The enclosed spreadsheet changes the Authority's selected removal to the default removal for benzene, ethylbenzene, toluene, and bis (2-ethylhexyl) phthalate. Note that the default removals for these pollutants are entered as user entered values since they are not already built into the spreadsheet.

For lead, a different approach was taken to determine a removal rate. Use of the influent/effluent, influent/sludge, or default removal results in a maximum allowable headworks loading that is exceeded by the current influent levels between 25% and 40% of the time based on the data included with the evaluation. Since there have been no exceedances of the effluent or sludge disposal standards based on the data included in the evaluation, this suggests that the maximum allowable headworks loading calculated using these removals is too low. Therefore, I determined the removal rate that would result in the highest possible maximum allowable headworks loading for lead for the Easterly Plant and included this value as a user entered removal rate. Note that even using this removal, about 20% of the influent values exceed the maximum allowable headworks loading while none of the effluent or sludge values exceed the effluent or sludge standards. This could be an indication that some of the monitoring results are invalid, and the Authority should review the data reported in the evaluation as well as its sampling procedures to determine if changes are necessary.

Note that for xylene and PCBs, the monitoring data do not support the determination of a removal rate and there are no EPA default removals available. While it is possible to calculate an influent/effluent removal for these pollutants, that removal is influence heavily by the difference in the detection levels used in the analysis. Therefore a removal of 0% was entered in the enclosed spreadsheet since use of this value results in the lowest possible maximum allowable headworks loading. With this conservative approach the evaluation indicates that current influent loading of xylene never exceeds 5% of the maximum allowable headworks loading (see Table 20 of the enclosed spreadsheet) and therefore a local limit for this pollutant may not be needed. For PCBs, this approach results in a negative local limit and further recommendations for this pollutant are provided below.

***Table 4 - Chronic Water Quality Standards** - As noted in the Authority's submission, PADEP calculated water quality based effluent limits for a number of pollutants and these water quality based effluent limits were used as NPDES limits in Table 3 of the spreadsheet. Where NPDES limits are used, use of water quality standards for those pollutants is not necessary because the calculated NPDES limits already address the water quality standards. Therefore the chronic water quality standards for those pollutants for which NPDES limits are listed in Table 3 have been deleted from Table 4.*

GDF acknowledges and is using US EPA's recommendations.

***Table 5 - Acute Water Quality Standards** - For the same reason, the water quality standards for pollutants for which an NPDES limit was included in Table 3 have been deleted from Table 5 as well.*

GDF acknowledges and is using US EPA's recommendations.

***Table 6 - Human Health Water Quality Standards** - As with Tables 4 and 5, the human health water quality standards for pollutants for which an NPDES limit was included in Table 3 have been deleted from Table 6.*

GDF acknowledges and is using US EPA's recommendations.

Table 7 - Comparison of Water Quality Loadings *- For cadmium, the Authority eliminated the allowable headworks loading based on the chronic water quality standard from further consideration because its NPDES permit does not inc1ude a specific limit for cadmium. However, dischargers are required to comply with water quality standards in the absence of an NPDES limit and therefore the Authority must consider the water quality standards in the development of its local limits. Note that correction of the cadmium limit in Table 3 as discussed above would mean that this issue in Table 7 would no longer exist since an allowable headworks loading based on the NPDES limit would be calculated. For antimony and bis (2-ethylhexyl) phthalate the Authority eliminated the allowable headworks loading based on the human health water quality standards because the nearest downstream drinking water intake is 121 miles away and the human health standards for these two pollutants are based on cancer risk. However, the cancer risk standards in PADEP's human health water quality standards apply at the point of discharge and not at the downstream drinking water intake. Therefore these human health standards apply to the Authority's discharge and must be used in the evaluation.*

GDF acknowledges and made modifications based on US EPA's recommendations.

Table 8 - Activated Sludge Inhibition *- Where no site specific criteria are available, EPA guidance includes a range of values for a number of pollutants that can be used as inhibition criteria for the development of local limits. In general, unless data are available to indicate otherwise, EPA recommends that the lowest value in the range be used in the local limits calculations to ensure that inhibition does not occur. Where the Authority has data that indicates that higher concentrations can be accepted, these values can be adjusted upwards. For lead, the Authority used an activated sludge inhibition criterion of 0.1 mg/l while the lowest criterion shown in the EPA guidance for lead is 1.0 mg/l. Since the criterion used by the Authority is lower than the EPA criterion it can be accepted. However, the Authority should provide a rationale for its use of the lower criterion. The enclosed spreadsheet uses an activated sludge inhibition criterion for lead of 1.0 mg/l.*

The reference source for lead criteria was the Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program, December 1987, US EPA; Table 3.2, minimum reported inhibition Threshold for Lead of 0.1 mg/l. The "new" Easterly WWTP process is a biological nutrient removal process, capable of operating in a 5-stage Bardenpho process and as a hybrid of the Virginia Initiative Process. It is critical the process is not inhibited in any manner to meet the NPDES nutrient removal requirements.

The Authority's evaluation used a removal rate of 0% for all of the pollutants for which activated sludge inhibition allowable headworks loadings were calculated. If there is no primary treatment prior to the activated sludge units, this approach is appropriate. However, if there is primary treatment, then there typically would be some removal prior to the activated sludge units. Where no data exists for determination of these site specific removal rates, we allow the use of EPA' s default removal rates, although since use of a removal of 0% would result in more stringent allowable headworks loadings, the Authority's approach could be accepted. Since the Authority used removals in the inhibition allowable headworks loading calculations in previous submissions, my understanding is that the Easterly Plant does include primary treatment. The enclosed spreadsheet uses available EPA default through primary removals in Table 8.

The Easterly WWTP does not have primary treatment since its upgrade in the early 1990s. The recent upgrade of the WWTP does not include primary treatment as part of the process.

Table 10 - Nitrification Inhibition *- As with the activated sludge inhibition criteria, where no site specific nitrification inhibition criteria exist EPA recommends that the lowest value in the range of EPA criteria for each pollutant be used in the local limits calculations to ensure that inhibition does not occur. Where the Authority has data that indicates that higher concentrations can be accepted, these values can be adjusted upwards. For mercury and silver, the Authority used activated sludge inhibition criteria of 2 mg/l and 0.25 mg/l respectively, although there are no nitrification inhibition criteria shown the guidance for these pollutants. Since criteria used by the Authority are lower than the EPA criteria they can be accepted. However, the Authority should provide a rationale for its use of these criteria. The enclosed spreadsheet keeps the Authority's nitrification inhibition criteria for both pollutants.*

The reference source for the mercury and silver criteria was the Guidance Manual for Preventing Interference at POTWs, September 1987, US EPA; Table 2.1, minimum reported nitrification inhibition valve for mercury was 2 mg/l and the reported nitrification inhibition value for silver was 0.25 mg/l. The "new" Easterly WWTP process is a biological nutrient removal process, capable of operating in a 5-stage Bardenpho process and as a hybrid of the Virginia Initiative Process. It is critical the process is not inhibited in any manner to meet the NPDES nutrient removal requirements.

The Authority's evaluation used a removal rate of 0% for all of the pollutants for which nitrification inhibition allowable headworks loadings were calculated. If there is no primary treatment prior to the nitrification units, this approach is appropriate. However, if there is treatment prior to the nitrification units, then there typically would be some removal. Where no data exists for determination of these site specific removal rates, we allow the use of EPA' s default removal rates, although since use of a removal of 0% would result in more stringent allowable headworks loadings, the Authority's approach could be accepted. Since the Authority used default primary removals in the nitrification inhibition allowable headworks loading calculations in previous submissions, my understanding is that the Easterly Plant includes primary treatment prior to the nitrification units. The enclosed spreadsheet uses available EPA default through primary removals in Table 10.

The Easterly WWTP does not have primary treatment since its upgrade in the early 1990s. The recent upgrade of the WWTP does not include primary treatment as part of the process.

Table 13 - Comparison of Inhibition Loadings *- Table 13 of Version 4.0 of the EPA local limits spreadsheet includes an area for the user to indicate whether or not inhibition or construction has occurred at the treatment plant during the time frame in which the influent data was collected. This table of the spreadsheet also selects the lowest of the calculated allowable headworks loadings based on inhibition and, if no inhibition or construction has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the POTW Monitoring Data worksheet) and selects the larger of the two as the allowable headworks loading based on inhibition. Where no inhibition or construction has occurred, the treatment plant has demonstrated that it can accept these measured concentrations without inhibition, and therefore it may not be appropriate to select a lower allowable headworks loading based on inhibition. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the POTW Monitoring Data worksheet or otherwise not included in the influent data set. Note that this adjustment assumes that no inhibition or construction has occurred at the Authority's treatment plant. If the Authority has experienced inhibition at the treatment plant, the maximum allowable headworks loading should not be adjusted based on the maximum influent concentration, and the spreadsheet will not make this comparison if the "yes" cell is checked to indicate that inhibition has occurred. If significant*

construction occurred at the treatment plant, the best approach is to eliminate all data collected prior to the construction. Based on the addition of the 2013 monitoring data, the "other maximum influent concentration" column was updated for arsenic, lead, and mercury. If the Authority believes that these results were reported in error rather than simply unusual concentrations that actually occurred they should not be used in the evaluation.

Since the wastewater treatment plant (WWTP) has been upgraded with start-up in the last year, to our knowledge no inhibition has been observed. The previous process was an activated sludge process with nitrification, no primary treatment, and aerobic sludge digestion. The new process is an activated sludge process with nitrification, denitrification and phosphorus removal; no primary treatment and aerobic sludge digestion. Both processes are activated sludge and while the biological kinetics, MCRT, and HRT would have changed, the metal and organic concentrations of concern should not be significantly impacted. The biggest impact will be the nitrogen and phosphorus concentrations in the effluent and sludge.

Table 18 - Calculation of Local Limits *- Table 18 shows the calculated maximum allowable headworks loading, maximum allowable industrial loading, and local limit for each pollutant based on the changes suggested above. As noted above, adjustments were made to the data handling for some pollutants on the non-industrial monitoring results, and the revised values used in the evaluation are shown on Table 18.*

The enclosed spreadsheet includes calculated limits that are negative for 2 pollutants, selenium and PCBs. Since it is impossible for a user to comply with a negative limit, it is not appropriate for the Authority to establish a negative limit. For PCBs, the low water quality standard often results in negative limits. To address this issue many POTWs adopt a no discharge limit with compliance with the no discharge limit shown through a non-detectable result using EPA method 608 (the most sensitive PCBs method currently listed in 40 CPR 136). Given the uncertainty in the removal rate and background data for PCBs because of the non- detectable analytical results, it may be easier to justify this approach rather than a specific numerical limit. For selenium, it appears that the negative limit is the result of the water quality standard used being significantly lower than the background concentration. As noted above, the Authority should confirm the actual value used in the evaluation for the water quality standard. In addition, I checked several limits evaluations by other POTWs and in all cases the background levels found by the Authority are significantly higher than background levels found by the other POTWs, often by an order of magnitude or more. This could suggest an unknown source of selenium in the Authority's system, and the Authority should take steps to determine if the selenium measured as the background is common throughout the system or an indication of an unknown source.

The Authority will establish a PCB limit of not detectable by analysis by EPA Method 608. The Authority will establish a selenium limit of not detectable by EPA Method 3113 B (AA, furnace; MDL of 2 ug/l), EPA Method 3114B (AA, gaseous hydride; MDL of 2 ug/l), or EPA Method 200.9 (STGFAA; MDL of 2 ug/l). Based on future selenium data with lower detection limits, if influent concentrations are detected, additional sampling will be performed to determine the source of the selenium.

Table 19 - Comparison of Limits *- This table compares the existing and calculated local limits to highlight which limits would be made more stringent (green bold) and which less stringent (brown bold) based on the calculations. In addition, this table shows the limits proposed in the Authority's submission and highlights (in red bold) any proposed limits that are less stringent than the limits calculated based on the*

comments provided above. The proposed limits that are less stringent than the calculated limits would be of most concern in this evaluation (arsenic, copper, mercury, nickel, selenium, ammonia, BODs, total suspended solids, xylene, phosphorus, nitrogen, PCBs, and bis (2-ethylhexyl) phthalate).

GDF acknowledges and made modifications to the Excel Spreadsheets (Revision 6) so that all of the proposed limits meet or are more stringent than the revised calculated limits except PCBs and selenium which are negative values and will have non-detectable limits.

***Evaluation of Calculations** - Table 20 shows the calculated maximum allowable headworks loading for each pollutant and compares this loading to the average and maximum loadings based on the Authority's monitoring data included in its submission. A green highlighted value indicates that the current influent loading is near but does not exceed the maximum allowable headworks loading, while a red highlighted value indicates that the current influent loading exceeds the maximum allowable headworks loading.*

GDF acknowledges US EPA's comments.

Table 21 of the enclosure shows the influent, effluent, and sludge goals based on the local limits reevaluation as adjusted in accordance with the comments above. The influent goal is the maximum allowable headworks loading converted to a concentration using the average POTW low from the reevaluation. Based on the reevaluation, this is the influent level that should not be exceeded in order to prevent effluent, sludge, or inhibition problems. The effluent goal is the allowable headworks loading based on protection of water quality, adjusted by the removal assumed in the reevaluation, and converted to a concentration. The effluent goal is the theoretical "limit" that the effluent should meet in order to protect water quality. The sludge goal is the exceptional quality standard for land application of sludge, which was used as the sludge protection criteria in the reevaluation. Evaluating these goals against the actual monitoring data can help assess whether problems exist in the limits reevaluation.

GDF acknowledges US EPA's comments.

Table 22 compares the influent, effluent and sludge goals to the monitoring data in the "POTW Monitoring Data" spreadsheet and highlights any exceedances in red bold. As shown on Table 22, this evaluation indicates that at the current influent levels there would be exceedances of both the influent and effluent goals for copper selenium, PCBs, and bis (2- ethylhexyl) phthalate which occur at similar frequencies. For PCBs and bis (2-ethylhexyl) phthalate most or all of the influent and effluent results exceed the respective goals but this is based mainly on non-detectable data. While the PCBs analysis was done with a reasonably low detection level, the detection level for bis (2-ethylhexyl) phthalate should be lowered in future analyses. For copper and selenium the exceedances are based on results reported above the detection level which suggests that the calculated maximum allowable headworks loading for these pollutants make sense and that a reduction in the levels of these pollutants in the influent is necessary to consistently meet the goals and NPDES permit limits.

For arsenic, lead, mercury, zinc, and phosphorus Table 22 shows influent exceedances without corresponding effluent or sludge exceedances. This could be an indication that the influent goal, and therefore the calculated local limit, is more stringent than necessary to protect the influent and sludge and prevent interference. However, a closer look at the influent data included with the submission suggests that these exceedances may not be significant or could be the result of other issues. For lead, as discussed above, the removal rate was selected to maximize the maximum allowable headworks loading

and therefore the influent goal, so it may not be possible to adjust this value further. For arsenic, lead, and mercury there were only one or two influent exceedances. Due to normal variations in monitoring data, one or two exceedances may not be significant. For phosphorus, nearly half of the influent results exceeded the influent goal. A review of the influent data shows that all of these exceedances occurred in January and February 2011 and are several times higher than any of the other influent results for phosphorus. The Authority should review its records to ensure that these phosphorus results were entered correctly and to determine if there are other influent results that show similar levels. It is noted that the nonindustrial data included with the submission shows levels that are similar to the lower influent values.

GDF acknowledges US EPA's comments. The Authority is evaluating the analytical method and corresponding level of detection for each parameter/contaminant of concern being used by the in house laboratory and by the commercial laboratory. The analytical method selected for each parameter will have a detection limit less than the permit limits and goals.

Westerly Treatment Plant

POTW Monitoring Data Spreadsheet

The data in the enclosed "POTW Monitoring Data" spreadsheet is generally the same as the data included in the Authority's submission, although as noted above, the data submitted with the Authority's 2013 annual report for the influent, effluent, and sludge was added. In addition, the Authority's handling of non-detectable results was reevaluated and revised in some instances. The recommended handling of the non-detectable values is shown in the enclosed spreadsheet using pink shading to indicate use of half the detection limit in place of non-detectable values and using green shading to indicate use of the detection limit in place of non-detectable values. In the enclosed spreadsheet, changes were made to the Authority's handling of non-detectable values for the influent data for arsenic, cadmium, chromium, cyanide, lead, mercury, selenium, and zinc, for the effluent data for arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, and zinc, and for the nonindustrial data for cyanide, lead, nickel, toluene, and xylene. Note that where the data only supported use of default removals, changes to the values were usually not made since it would not impact the final evaluation.

In addition, there were a number of sample results that I eliminated from the data set (grey shaded cell with an "X" after the result). Sample results in addition to those eliminated by the Authority were eliminated using this method on the influent (chromium, mercury, molybdenum, and nickel), the effluent (copper and mercury), the sludge (arsenic, cadmium, chromium, copper, lead, nickel, silver; and zinc), and the nonindustrial (phosphorus). In addition, I reevaluated the Borough's elimination of data points using this same methodology and recommend that the Borough use several of the values that it had eliminated from the data sets. Sample results were used based on this methodology for cadmium (sludge), chromium (sludge), selenium (influent), zinc (sludge), and toluene (hauled). Note that for hauled waste I generally do not recommend elimination of "outliers" because POTWs often receive different types of hauled wastes from different sources and these wastes can vary significantly. A much larger data set is required to eliminate results in this way, as well as a different type of evaluation. I also eliminated sample results where the detection limit for non-detectable values was above the average for the pollutant and sample point (grey shaded cell with "<" before the result). This was done for arsenic (sludge - 9/9/10) and cadmium (influent and effluent - 2009, 2010, and 2011).

Revisions of the spreadsheets from US EPA (Revision 6) were made and followed the same aforementioned protocol discussed above for the input of the data with non-detectable results. In addition, the removal efficiency value was detected for influent and effluent calculations when both the influent and effluent values are non-detectable. Calculated removal efficiencies that had negative values were deleted or replaced with a value of zero.

Local Limits Calculation Spreadsheet

Table 2b - Flow and Receiving Stream Data *- The Authority used a POTW flow of 8.077 mgd and sludge flow to disposal of 2.366 dry metric tons per day. The report indicates that these flows are based on the 2008 through 2013 time frame for the POTW flow and 2013 for the sludge flow. In general, both flows should be based on data from the same time frame, and a longer-term average is more appropriate unless there is a specific reason to use a shorter time frame (e.g., significant change in flows based on service area growth). Based on the Authority's discharge monitoring report data in on our computer system I calculated the average effluent flow for the January 2008 through December 2013 time period and obtained a flow of 7.53 mgd.*

For sludge, although I did not have access to the reported sludge data for 2013, the average sludge flow for 2008 through 2012 based on the data in our computer system was 1.83 dry metric tons per day. A copy of each of the spreadsheets showing the data that I pulled from our computer system is enclosed, and the revised flows are used in the enclosed Local Limits Calculation spreadsheet. Note that for the sludge flow, the Authority should include the 2013 data that I did not have access to. In addition, based on the effluent flow data, it appears that the flow for calendar years 2012 and 2013 was significantly lower than the flows in the previous years. If this is because of a change in the system (e.g., elimination of some flows) it may be more appropriate to use only the flows from these two years. In any case, the Authority should verify the flows that it used in the evaluation, and ensure that all of the flows reflect the same time period. Since the Authority's evaluation does not include inhibition of anaerobic digesters, the sludge flow to the digesters is not needed.

GDF used the Authority's Chapter 94 Report data for influent flows and sludge generated. Please see the table below:

Year	Influent Annual Flow (mgd)	Influent Organic (BOD5) (lb/day)	Sludge Flow to Digesters (mgd)
2008	8.017	7,413	
2009	7.472	8,414	
2010	7.516	8,615	
2011	13.743	13,350	
2012	5.754	4,580	
2013	5.959	4,723	0.055

The POTW flow value was changed to 8.077 mgd. We believe the Chapter 94 Report information is representative of the influent received by the WWTP. Since the WWTP has been upgraded with start-up in the last two years, only the most recent sludge generation data was used. The Westerly WWTP utilizes thickening of the waste activated sludge following by aerobic sludge digestion.

Table 3 - NPDES Effluent Limits *- The Authority's submission indicates that the potential permit limits used in the previous evaluation were updated based on PADEP's most recent Water Quality Protection Report. It does not appear that we have a copy of that report in our files, but most of the values used by the Authority are fairly close to the values used in the previous submission and therefore appear to be appropriate. The one exception is selenium. For this pollutant, the Authority's submission uses a value of 0.006808 which is an order of magnitude lower than the value used in the previous submission. The Authority should therefore review and verify this value.*

GDF was able to obtain PA DEP's Water Quality Protection Reports (WQPR) from file review at the PA DEP's Southcentral Region Office. GDF attempted to obtain the PENTOX Model from PA DEP's Permit Engineer but was not able to obtain any information. The December 8, 2005 WQPR contains PENTOXSD results (dated 12/8/05) at a discharge flow of 10.8 mgd and an effluent selenium limit of 6.808 ug/l. This report had additional information in the report, including a stream hardness value of 185 mg/l. The spreadsheet was updated with this hardness value. The other NPDES values were verified with the PENTOX Model results. The values for cadmium, chromium, and zinc had additional significant figure digits, which were added to the spreadsheet. If the US EPA has more updated data, please provide this information to GDF and the Authority.

Based on the changes that I made to the handling of the influent, effluent, and sludge monitoring data (see comments under "POTW Monitoring Data Spreadsheet"), the removal rates used in the local limits calculations were revised. In addition, the Authority's selection of the removal rate used in the evaluation was reviewed and revised in some cases. The recommended selection of removal rate for each pollutant is shown in the "Select Removal Efficiency" column in Table 3 of the enclosed spreadsheet. The enclosed spreadsheet changed the

Authority's selected removal to the influent/sludge removal for antimony. Note that forcadmium and selenium there is influent and sludge data available that could be used for calculation of a removal rate. However, use of the influent/sludge removal results in a negative local limit and therefore the Authority's selection of the default removal are acceptable. The enclosed spreadsheet changes the Authority's selected removal to the default removal for chromium, mercury, benzene, and ethylbenzene. Note that the default removals for benzene and ethylbenzene are entered as user entered values since they are not already built into the spreadsheet.

GDF acknowledges and agrees with the change to the influent/sludge removal for antimony. The toluene removal was changed from influent/effluent to user entered due to the majority of the data being non-detectable. The user entered data is consistent with the Easterly WWTP value of 93% . The xylene removal was changed from influent/effluent to user entered due to the majority of the data being non-detectable. The user entered data is consistent with the Easterly WWTP value of 0%. The PCBs removal was changed from influent/effluent to user entered due to the majority of the data being non-detectable. The user entered data is consistent with the Easterly WWTP value of 0%.

Table 4 - Chronic Water Quality Standards *- As noted in the Authority's submission, PADEP calculated water quality based effluent limits for a number of pollutants and these water quality based effluent limits were used as NPDES limits in Table 3 of the spreadsheet. Where NPDES limits are used, use of water quality standards for those pollutants is not necessary because the calculated NPDES limits already address the water quality standards. Therefore the chronic water quality standards for those pollutants for which NPDES limits are listed in Table 3 have been deleted from Table 4.*

GDF acknowledges and is using US EPA's recommendations.

Table 5 - Acute Water Quality Standards *- For the same reason, the water quality standards for pollutants for which an NPDES limit was included in Table 3 have been deleted from Table 5 as well.*

GDF acknowledges and is using US EPA's recommendations.

Table 6 - Human Health Water Quality Standards *- As with Tables 4 and 5, the human health water quality standards for pollutants for which an NPDES limit was included in Table 3 have been deleted from Table 6.*

GDF acknowledges and is using US EPA's recommendations.

Table 7 - Comparison of Water Quality Loadings *- For cadmium the Authority eliminated the allowable headworks loading based on the chronic water quality standard and for mercury the Authority eliminated the allowable headworks loading based on the NPDES "limit" from further consideration because its NPDES permit does not include a specific limit for either pollutant. However, dischargers are required to comply with water quality standards in the absence of an NPDES limit and therefore the Authority must consider the water quality standards in the development of its local limits. For PCBs the Authority eliminated the allowable headworks loading based on the human health water quality standards because the nearest downstream drinking water intake is 143 miles away and the human health standard for this pollutant is based on cancer risk. However, the cancer risk standards in PADEP's human health water quality standards apply at the point of discharge and not at the downstream drinking water intake.*

Therefore these human health standards apply to the Authority's discharge and must be used in the evaluation.

GDF acknowledges and made modifications based on US EPA's recommendations.

Table 8 - Activated Sludge Inhibition *- As with the Easterly Plant, the Authority used an activated sludge inhibition criterion of 0.1 mg/l for lead while the lowest criterion shown in the EPA guidance for lead is 1.0 mg/l. Since the criterion used by the Authority is lower than the EPA criterion it can be accepted. However, the Authority should provide a rationale for its use of the lower criterion. The enclosed spreadsheet uses an activated sludge inhibition criterion for lead of 1.0 mg/l.*

The reference source for lead criteria was Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program, December 1987, US EPA; Table 3.2, minimum reported inhibition Threshold for Lead of 0.1 mg/l. The "new" Westerly WWTP's process is a biological nutrient removal process, capable of operating in a 5-stage Bardenpho process and as a hybrid of the Virginia Initiative Process. It is critical the process is not inhibited in any manner to meet the NPDES nutrient removal requirements.

The Authority's evaluation used a removal rate of 0% for all of the pollutants for which activated sludge inhibition allowable headworks loadings were calculated. If there is no primary treatment prior to the activated sludge units, this approach is appropriate. However, if there is primary treatment, then there typically would be some removal prior to the activated sludge units. Where no data exists for determination of these site specific removal rates, we allow the use of EPA' s default removal rates,

although since use of a removal of 0% would result in more stringent allowable headworks loadings, the Authority's approach could be accepted. Since the Authority used removals in the inhibition allowable headworks loading calculations in previous submissions, my understanding is that the Westerly Plant does include primary treatment. The enclosed spreadsheet uses available EPA default through primary removals in Table 8.

The Westerly WWTP does not have primary treatment since its upgrade in the early 1990s. The recent upgrade of the WWTP does not include primary treatment as part of the process.

Table 10 - Nitrification Inhibition *- For mercury and silver, the Authority used activated sludge inhibition criteria of 2 mg/l and 0.25 mg/l respectively, although there are no nitrification inhibition criteria shown in the EPA guidance for these pollutants. Since the criteria used by the Authority are lower than the EPA criteria they can be accepted. However, the Authority should provide a rationale for its use of these criteria. The enclosed spreadsheet keeps the Authority's nitrification inhibition criteria for both pollutants.*

The reference source for the mercury and silver criteria was Guidance Manual for Preventing Interference at POTWs, September 1987, US EPA; Table 2.1, minimum reported nitrification inhibition valve for mercury was 2 mg/l and the reported nitrification inhibition value for silver was 0.25 mg/l. The "new" Westerly WWTP's process is a biological nutrient removal process, capable of operating in a 5-stage Bardenpho process and as a hybrid of the Virginia Initiative Process. It is critical the process is not inhibited in any manner to meet the NPDES nutrient removal requirements.

The Authority's evaluation used a removal rate of 0% for all of the pollutants for which nitrification inhibition allowable headworks loadings were calculated. If there is no primary treatment prior to the nitrification units, this approach is appropriate. However, if there is treatment prior to the nitrification units, then there typically would be some removal. Where no data exists for determination of these site specific removal rates, we allow the use of EPA's default removal rates, although since use of a removal of 0% would result in more stringent allowable headworks loadings, the Authority's approach could be accepted. Since the Authority used default primary removals in the nitrification inhibition allowable headworks loading calculations in previous submissions, my understanding is that the Westerly Plant includes primary treatment prior to the nitrification units. The enclosed spreadsheet uses available EPA default through primary removals in Table 10.

The Westerly WWTP does not have primary treatment since its upgrade in the early 1990s. The recent upgrade of the WWTP does not include primary treatment as part of the process.

Table 13 - Comparison of Inhibition Loadings *- As noted above, Table 13 of Version 4.0 of the EPA local limits spreadsheet selects the lowest of the calculated allowable headworks loadings based on inhibition and, if no inhibition or construction has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the POTW Monitoring Data worksheet) and selects the larger of the two as the allowable headworks loading based on inhibition. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the POTW Monitoring Data worksheet or otherwise not included in the influent data set. Based on the addition of the 2013 monitoring data, the "other maximum influent concentration" column was updated for chromium, mercury, nickel, and selenium. If the Authority believes that these results were reported in error rather than simply unusual concentrations that actually occurred they should not be used in the evaluation.*

Since the wastewater treatment plant (WWTP) has been upgraded with start-up in the last two years, to our knowledge no inhibition has been observed. The previous process was an activated sludge process with nitrification, no primary treatment and aerobic sludge digestion. The new process is an activated sludge process with nitrification, denitrification and phosphorus removal; no primary treatment, and aerobic sludge digestion. Both processes are activated sludge and while the biological kinetics, MCRT, and HRT would have changed, the metal and organic concentrations of concern should not be significantly impacted. The biggest impact will be the nitrogen and phosphorus concentrations in the effluent and sludge.

Table 18 - Calculation of Local Limits *- Table 18 shows the calculated maximum allowable headworks loading, maximum allowable industrial loading, and local limit for each pollutant based on the changes suggested above. As noted above, adjustments were made to the data handling for some pollutants on the non-industrial monitoring results, and the revised values used in the evaluation are shown on Table 18.*

In addition, the nonindustrial concentrations for cadmium, mercury, selenium, and nitrogen were set equal to the average influent concentrations. Based on the calculated nonindustrial concentrations, the nonindustrial loading was greater than the maximum allowable headworks loading resulting in a negative local limit. Since the nonindustrial flow is nearly 98% of the total flow to the treatment plant, a significant discrepancy between the nonindustrial concentrations and the influent concentrations would also not be expected.

The enclosed spreadsheet includes a calculated limit that is negative for PCBs. Since it is impossible for a user to comply with a negative limit, it is not appropriate for the Authority to establish a negative limit. Note that for PCBs, the low water quality standard often results in negative limits, largely due to the number of non-detectable results. To address this issue many POTWs adopt a no discharge limit with compliance with the no discharge limit shown through a non-detectable result using EPA method 608 (the most sensitive PCBs method currently listed in 40 CFR 136). Given the uncertainty in the removal rate and background data for PCBs because of the non-detectable analytical results, it may be easier to justify this approach rather than a specific numerical limit.

GDF acknowledges and made modifications based on US EPA's recommendations. The Authority will establish a PCB limit of not detectable by analysis by EPA Method 608.

Table 19 - Comparison of Limits *- This table compares the existing and calculated local limits to highlight which limits would be made more stringent (green bold) and which less stringent (brown bold) based on the calculations. In addition, this table shows the limits proposed in the Authority's submission and highlights (in red bold) any proposed limits that are less stringent than the limits calculated based on the comments provided above. The proposed limits that are less stringent than the calculated limits would be of most concern in this evaluation (cadmium, copper, cyanide, mercury, nickel, silver, zinc, toluene, and PCBs).*

GDF acknowledges and made modifications to the Excel Spreadsheets (Revision 6) so that all of the proposed limits meet or are more stringent than the calculated limits except PCBs which is negative and will have non-detectable limits.

Evaluation of Calculations - Table 20 *shows the calculated maximum allowable headworks loading for each pollutant and compares this loading to the average and maximum loadings based on the Authority's monitoring data included in its submission. As noted above, a green highlighted value indicates that the current influent loading is near but does not exceed the maximum allowable headworks loading, while a red highlighted value indicates that the current influent loading exceeds the maximum allowable headworks loading.*

Table 21 *of the enclosure shows the influent, effluent, and sludge goals based on the local limits reevaluation as adjusted in accordance with the comments above, while Table 22 compares the influent, effluent, and sludge goals to the monitoring data in the "POTW Monitoring Data" spreadsheet and highlights any exceedances in red bold. As shown on Table 22, this evaluation indicates that at the current influent levels there would be exceedances of both the influent and effluent goals for cadmium, selenium, PCBs, and bis (2-ethylhexyl) phthalate. For PCBs and bis (2-ethylhexyl) phthalate most or all of the influent and effluent results exceed the respective goals but this is based mainly on non-detectable data. While the PCBs analysis was done with a reasonably low detection level, the detection level for bis (2-ethylhexyl) phthalate should be lowered in future analyses. For selenium the exceedances are based on results that are mainly reported above the detection level. A closer look at the data indicates that the results from calendar year 2011 and earlier are reported with significantly higher levels of selenium than the results for 2012 and 2013. The Authority should investigate the reasons for this discrepancy as a way to ensure that the more recent lower levels continue. For cadmium, the influent exceedances are reported as values above detection, while many of the effluent exceedances are reported as values below detection. The reported result for December 11, 2103 appears to have used a lower detection level that was below both the influent and effluent goals and therefore the Authority should have its lab continue to use this lower detection in future cadmium monitoring.*

The Authority is evaluating the analytical method and corresponding level of detection for each parameter/contaminant of concern being used by the in house laboratory and by the commercial laboratory. The analytical method selected for each parameter will have a detection limit less than the permit limits and goals. Based on future selenium data with lower detection limits, if influent concentration are detected, additional sampling will be performed to determine the source of the selenium.

For lead, BOD5, and total nitrogen Table 22 shows influent exceedances without corresponding effluent or sludge exceedances. This could be an indication that the influent goal, and therefore the calculated local limit, is more stringent than necessary to protect the influent and sludge and prevent interference. However, due to normal variations in monitoring data, one or two exceedances may not be significant.

GD&F acknowledges this comment but believes the current implied goals are necessary to protect the process.

Please review these comments and the attached revisions to the local limit spreadsheets. If you have any questions or need additional information, please contact us.

Respectfully submitted,
GWIN, DOBSON & FOREMAN, INC.

James L. Balliet
Director of Facilities Planning

Enclosures
JLB/aeh
13038/ltr/US EPA_Pretreatment_9-3-14.doc
cc: Ryan Beasom, Altoona Water Authority
Mark Perry, Altoona Water Authority
File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JUL 2 2014

Mr. Ryan Beasom
Environmental Services Manager
Altoona Water Authority
Wastewater Treatment Operations
144 Westerly Treatment Plant Road
Duncansville, Pennsylvania 16635-7800

Re: Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Beasom:

I have completed review of the Authority's local limits reevaluation submitted on June 13, 2014. Based on this review, changes will be needed to the submission prior to approval as indicated in my comments below. Enclosed is a printout of a spreadsheet (version 4.0) used to calculate local limits in which the data inputs are revised as discussed below. This printout is not intended to be used by the Authority directly, but is only included as an indication of the effect of the changes based on my comments. The comments below are presented in the order that the data is presented in the "Local Limits Calculation" spreadsheet. As shown at the bottom of the first column in the "POTW Monitoring Data" spreadsheet, green and pink shaded boxes in this spreadsheet highlight any data reported as non-detectable and indicate how those data were handled for purposes of the calculations. Grey shaded boxes highlight any data that was excluded from the data set because it did not appear to be consistent with the rest of the data set for that pollutant.

The Authority added 2012 monitoring data for the treatment plants to the previously submitted data set for the local limits development. This is appropriate to update the evaluation. However, since it is now about halfway through calendar year 2014, it is probably appropriate to also add the data from calendar year 2013 as well as any data that has been collected for calendar year 2014. The enclosed spreadsheets include the data that was submitted by the Authority with its 2013 annual pretreatment report but do not include any 2014 data since that data was not available to me.

Easterly Treatment Plant

POTW Monitoring Data Spreadsheet

The data in the enclosed "POTW Monitoring Data" spreadsheet is generally the same as the data included in the Authority's submission, although as noted above, the data submitted with the Authority's 2013 annual report for the influent, effluent, and sludge was added. In addition, the Authority's handling of non-detectable results was reevaluated and revised in some instances. In general, where most or all of the results for a pollutant at a given sample point are reported as

non-detectable, I recommend use of half the detection limit as a surrogate. This assumes that where most or all of the results are reported as non-detectable, the actual result is likely to be well below the detection limit. Where only a few of the results for a pollutant at a given sample point are reported as non-detectable, I recommend use of the detection limit as a surrogate. This assumes that where only a few of the results are reported as non-detectable, the actual result is likely to be near the detection limit. The recommended handling of the non-detectable values is shown in the enclosed spreadsheet using pink shading to indicate use of half the detection limit in place of non-detectable values and using green shading to indicate use of the detection limit in place of non-detectable values. In the enclosed spreadsheet, changes were made to the Authority's handling of non-detectable values for the influent data for lead, mercury, selenium, and bis (2-ethylhexyl) phthalate, for the effluent data for molybdenum, nickel, and selenium, for the sludge data for PCBs, and for the nonindustrial data for molybdenum and PCBs. Note that where the data only supported use of default removals, changes to the values were usually not made since it would not impact the final evaluation.

In addition, there were a number of sample results that I eliminated from the data set. Version 4.0 of the local limits spreadsheet determines the standard deviation of the data set and highlights any value that is different than the average by more than two times the standard deviation. As suggested in the EPA local limits guidance, these values are considered to be outliers (not representative of the data set) and were eliminated from the data set (grey shaded cell with an "X" after the result). Sample results in addition to those eliminated by the Authority were eliminated using this method on the influent (arsenic, chromium, lead, mercury, molybdenum, selenium, BOD_5, and antimony), the effluent (arsenic, chromium, cyanide, lead, mercury, nickel, selenium, and silver), and the sludge (cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc). In addition, I reevaluated the Borough's elimination of data points using this same methodology and recommend that the Borough use several of the values that it had eliminated from the data sets. Sample results were used based on this methodology for copper (influent and sludge), nickel (influent), zinc (influent), and PCBs (nonindustrial). Note that after elimination of data points the spreadsheet recalculates the standard deviation and reassesses the data set, but these secondary outliers were not eliminated from the data sets. I also eliminated sample results where the detection limit for non-detectable values was above the average for the pollutant and sample point (grey shaded cell with "<" before the result). This assumes that a non-detectable result should not be greater than a majority of the detectable results. This was done for arsenic (influent – 9/21/11), cadmium (influent – 5/21/09 and 9/21/11), chromium (influent - 9/16/13), silver (influent – 12/11/13), antimony (influent – 2/12/13 and 5/16/13; effluent – 2/12/13; sludge – 9/16/13), benzene (sludge - 9/16/13), PCBs (influent – 9/16/13; sludge – 9/28/12), and bis (2-ethylhexyl) phthalate (sludge – 9/16/13).

Local Limits Calculation Spreadsheet

Table 2b - Flow and Receiving Stream Data - The Authority used a POTW flow of 4.994 mgd and sludge flow to disposal of 1.074 dry metric tons per day. The report indicates that these flows are based on the 2008 through 2013 time frame for the POTW flow and 2013 for the sludge flow. In general, both flows should be based on data from the same time frame, and a longer-term average is more appropriate unless there is a specific reason to use a shorter time frame (e.g., significant change in flows based on service area growth). Based on the Authority's

discharge monitoring report data in on our computer system I calculated the average effluent flow for the January 2008 through December 2013 time period and obtained a flow of 5.32 mgd. For sludge, although I did not have access to the reported sludge data for 2013, the average sludge flow for 2008 through 2012 based on the data in our computer system was 1.30 dry metric tons per day. A copy of each of the spreadsheets showing the data that I pulled from our computer system is enclosed, and the revised flows are used in the enclosed Local Limits Calculation spreadsheet. Note that for the sludge flow, the Authority should include the 2013 data that I did not have access to. In addition, based on the effluent flow data, it appears that the flow for calendar years 2012 and 2013 was significantly lower than the flows in the previous years. If this is because of a change in the system (e.g., elimination of some flows) it may be more appropriate to use only the flows from these two years. In any case, the Authority should verify the flows that it used in the evaluation, and ensure that all of the flows reflect the same time period. Since the Authority's evaluation does not include inhibition of anaerobic digesters, the sludge flow to the digesters is not needed.

Table 3 - NPDES Effluent Limits – The Authority's submission indicates that the potential permit limits used in the previous evaluation were updated based on PADEP's most recent Water Quality Protection Report. It does not appear that we have a copy of that report in our files, but most of the values used by the Authority are fairly close to the values used in the previous submission and therefore appear to be appropriate. The two exceptions are cadmium and selenium. For cadmium, the Authority's spreadsheet lists the value as "?0.000445?/?0.004188?". Since excel handles this as a non-numeric value, no allowable headworks loading based on the NPDES "limit" is calculated in the Authority's spreadsheet. Based on the previous submission, the enclosed spreadsheet uses the 0.004188 value, but the Authority will need to review the PADEP water quality report and use the appropriate value. For selenium, the Authority's submission uses a value of 0.005536 which is an order of magnitude lower than the value used in the previous submission. The Authority should therefore review and verify this value.

Based on the changes that I made to the handling of the influent, effluent, and sludge monitoring data (see comments under "POTW Monitoring Data Spreadsheet"), the removal rates used in the local limits calculations were revised. In addition, the Authority's selection of the removal rate used in the evaluation was reviewed and revised in some cases. The recommended selection of removal rate for each pollutant is shown in the "Select Removal Efficiency" column in Table 3 of the enclosed spreadsheet. In general, where actual influent and effluent data that were not reported as non-detectable were available, a removal based on the average influent and the average effluent was selected. The enclosed spreadsheet changed the Authority's selected removal to the influent/effluent removal for copper, nickel, and selenium. Where the influent/effluent removal could not be used, a removal based on the average influent load and average sludge load was used. The enclosed spreadsheet changed the Authority's selected removal to the influent/sludge removal for chromium, silver, and antimony. Note that for molybdenum there is influent and effluent data available that could be used for calculation of a removal rate. However, use of the influent/effluent removal results in a negative local limit based on protection of sludge quality. Since the Authority's sludge monitoring data for molybdenum indicates that its sludge quality is currently well below the sludge standard, this suggests that the influent/effluent removal is not appropriate and therefore the Authority's selection of the influent/sludge removal appears appropriate. Where the influent, effluent, and

sludge data could not be used to determine a removal rate, EPA's default removal for activated sludge treatment plants was used. The enclosed spreadsheet changes the Authority's selected removal to the default removal for benzene, ethylbenzene, toluene, and bis (2-ethylhexyl) phthalate. Note that the default removals for these pollutants are entered as user entered values since they are not already built into the spreadsheet.

For lead, a different approach was taken to determine a removal rate. Use of the influent/effluent, influent/sludge, or default removal results in a maximum allowable headworks loading that is exceeded by the current influent levels between 25% and 40% of the time based on the data included with the evaluation. Since there have been no exceedances of the effluent or sludge disposal standards based on the data included in the evaluation, this suggests that the maximum allowable headworks loading calculated using these removals is too low. Therefore, I determined the removal rate that would result in the highest possible maximum allowable headworks loading for lead for the Easterly Plant and included this value as a user entered removal rate. Note that even using this removal, about 20% of the influent values exceed the maximum allowable headworks loading while none of the effluent or sludge values exceed the effluent or sludge standards. This could be an indication that some of the monitoring results are invalid, and the Authority should review the data reported in the evaluation as well as its sampling procedures to determine if changes are necessary.

Note that for xylene and PCBs, the monitoring data do not support the determination of a removal rate and there are no EPA default removals available. While it is possible to calculate an influent/effluent removal for these pollutants, that removal is influence heavily by the difference in the detection levels used in the analysis. Therefore a removal of 0% was entered in the enclosed spreadsheet since use of this value results in the lowest possible maximum allowable headworks loading. With this conservative approach the evaluation indicates that current influent loading of xylene never exceeds 5% of the maximum allowable headworks loading (see Table 20 of the enclosed spreadsheet) and therefore a local limit for this pollutant may not be needed. For PCBs, this approach results in a negative local limit and further recommendations for this pollutant are provided below.

Table 4 - Chronic Water Quality Standards - As noted in the Authority's submission, PADEP calculated water quality based effluent limits for a number of pollutants and these water quality based effluent limits were used as NPDES limits in Table 3 of the spreadsheet. Where NPDES limits are used, use of water quality standards for those pollutants is not necessary because the calculated NPDES limits already address the water quality standards. Therefore the chronic water quality standards for those pollutants for which NPDES limits are listed in Table 3 have been deleted from Table 4.

Table 5 - Acute Water Quality Standards – For the same reason, the water quality standards for pollutants for which an NPDES limit was included in Table 3 have been deleted from Table 5 as well.

Table 6 - Human Health Water Quality Standards – As with Tables 4 and 5, the human health water quality standards for pollutants for which an NPDES limit was included in Table 3 have been deleted from Table 6.

Table 7 – Comparison of Water Quality Loadings – For cadmium, the Authority eliminated the allowable headworks loading based on the chronic water quality standard from further consideration because its NPDES permit does not include a specific limit for cadmium. However, dischargers are required to comply with water quality standards in the absence of an NPDES limit and therefore the Authority must consider the water quality standards in the development of its local limits. Note that correction of the cadmium limit in Table 3 as discussed above would mean that this issue in Table 7 would no longer exist since an allowable headworks loading based on the NPDES limit would be calculated. For antimony and bis (2-ethylhexyl) phthalate the Authority eliminated the allowable headworks loading based on the human health water quality standards because the nearest downstream drinking water intake is 121 miles away and the human health standards for these two pollutants are based on cancer risk. However, the cancer risk standards in PADEP's human health water quality standards apply at the point of discharge and not at the downstream drinking water intake. Therefore these human health standards apply to the Authority's discharge and must be used in the evaluation.

Table 8 - Activated Sludge Inhibition - Where no site specific criteria are available, EPA guidance includes a range of values for a number of pollutants that can be used as inhibition criteria for the development of local limits. In general, unless data are available to indicate otherwise, EPA recommends that the lowest value in the range be used in the local limits calculations to ensure that inhibition does not occur. Where the Authority has data that indicates that higher concentrations can be accepted, these values can be adjusted upwards. For lead, the Authority used an activated sludge inhibition criterion of 0.1 mg/l while the lowest criterion shown in the EPA guidance for lead is 1.0 mg/l. Since the criterion used by the Authority is lower than the EPA criterion it can be accepted. However, the Authority should provide a rationale for its use of the lower criterion. The enclosed spreadsheet uses an activated sludge inhibition criterion for lead of 1.0 mg/l.

The Authority's evaluation used a removal rate of 0% for all of the pollutants for which activated sludge inhibition allowable headworks loadings were calculated. If there is no primary treatment prior to the activated sludge units, this approach is appropriate. However, if there is primary treatment, then there typically would be some removal prior to the activated sludge units. Where no data exists for determination of these site specific removal rates, we allow the use of EPA's default removal rates, although since use of a removal of 0% would result in more stringent allowable headworks loadings, the Authority's approach could be accepted. Since the Authority used removals in the inhibition allowable headworks loading calculations in previous submissions, my understanding is that the Easterly Plant does include primary treatment. The enclosed spreadsheet uses available EPA default through primary removals in Table 8.

Table 10 - Nitrification Inhibition – As with the activated sludge inhibition criteria, where no site specific nitrification inhibition criteria exist EPA recommends that the lowest value in the range of EPA criteria for each pollutant be used in the local limits calculations to ensure that inhibition does not occur. Where the Authority has data that indicates that higher concentrations can be accepted, these values can be adjusted upwards. For mercury and silver, the Authority used activated sludge inhibition criteria of 2 mg/l and 0.25 mg/l respectively, although there are no nitrification inhibition criteria shown in the EPA guidance for these pollutants. Since the

criteria used by the Authority are lower than the EPA criteria they can be accepted. However, the Authority should provide a rationale for its use of these criteria. The enclosed spreadsheet keeps the Authority's nitrification inhibition criteria for both pollutants.

The Authority's evaluation used a removal rate of 0% for all of the pollutants for which nitrification inhibition allowable headworks loadings were calculated. If there is no primary treatment prior to the nitrification units, this approach is appropriate. However, if there is treatment prior to the nitrification units, then there typically would be some removal. Where no data exists for determination of these site specific removal rates, we allow the use of EPA's default removal rates, although since use of a removal of 0% would result in more stringent allowable headworks loadings, the Authority's approach could be accepted. Since the Authority used default primary removals in the nitrification inhibition allowable headworks loading calculations in previous submissions, my understanding is that the Easterly Plant includes primary treatment prior to the nitrification units. The enclosed spreadsheet uses available EPA default through primary removals in Table 10.

Table 13 - Comparison of Inhibition Loadings - Table 13 of Version 4.0 of the EPA local limits spreadsheet includes an area for the user to indicate whether or not inhibition or construction has occurred at the treatment plant during the time frame in which the influent data was collected. This table of the spreadsheet also selects the lowest of the calculated allowable headworks loadings based on inhibition and, if no inhibition or construction has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the POTW Monitoring Data worksheet) and selects the larger of the two as the allowable headworks loading based on inhibition. Where no inhibition or construction has occurred, the treatment plant has demonstrated that it can accept these measured concentrations without inhibition, and therefore it may not be appropriate to select a lower allowable headworks loading based on inhibition. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the POTW Monitoring Data worksheet or otherwise not included in the influent data set. Note that this adjustment assumes that no inhibition or construction has occurred at the Authority's treatment plant. If the Authority has experienced inhibition at the treatment plant, the maximum allowable headworks loading should not be adjusted based on the maximum influent concentration, and the spreadsheet will not make this comparison if the "Yes" cell is checked to indicate that inhibition has occurred. If significant construction occurred at the treatment plant, the best approach is to eliminate all data collected prior to the construction. Based on the addition of the 2013 monitoring data, the "other maximum influent concentration" column was updated for arsenic, lead, and mercury. If the Authority believes that these results were reported in error rather than simply unusual concentrations that actually occurred they should not be used in the evaluation.

Table 18 - Calculation of Local Limits - Table 18 shows the calculated maximum allowable headworks loading, maximum allowable industrial loading, and local limit for each pollutant based on the changes suggested above. As noted above, adjustments were made to the data handling for some pollutants on the non-industrial monitoring results, and the revised values used in the evaluation are shown on Table 18.

The enclosed spreadsheet includes calculated limits that are negative for 2 pollutants,

selenium and PCBs. Since it is impossible for a user to comply with a negative limit, it is not appropriate for the Authority to establish a negative limit. For PCBs, the low water quality standard often results in negative limits. To address this issue many POTWs adopt a no discharge limit with compliance with the no discharge limit shown through a non-detectable result using EPA method 608 (the most sensitive PCBs method currently listed in 40 CFR 136). Given the uncertainty in the removal rate and background data for PCBs because of the non-detectable analytical results, it may be easier to justify this approach rather than a specific numerical limit. For selenium, it appears that the negative limit is the result of the water quality standard used being significantly lower than the background concentration. As noted above, the Authority should confirm the actual value used in the evaluation for the water quality standard. In addition, I checked several limits evaluations by other POTWs and in all cases the background levels found by the Authority are significantly higher than background levels found by the other POTWs, often by an order of magnitude or more. This could suggest an unknown source of selenium in the Authority's system, and the Authority should take steps to determine if the selenium measured as the background is common throughout the system or an indication of an unknown source.

Table 19 - Comparison of Limits - This table compares the existing and calculated local limits to highlight which limits would be made more stringent (green bold) and which less stringent (brown bold) based on the calculations. In addition, this table shows the limits proposed in the Authority's submission and highlights (in red bold) any proposed limits that are less stringent than the limits calculated based on the comments provided above. The proposed limits that are less stringent than the calculated limits would be of most concern in this evaluation (arsenic, copper, mercury, nickel, selenium, ammonia, BOD_5, total suspended solids, xylene, phosphorus, nitrogen, PCBs, and bis (2-ethylhexyl) phthalate).

Evaluation of Calculations - Table 20 shows the calculated maximum allowable headworks loading for each pollutant and compares this loading to the average and maximum loadings based on the Authority's monitoring data included in its submission. A green highlighted value indicates that the current influent loading is near but does not exceed the maximum allowable headworks loading, while a red highlighted value indicates that the current influent loading exceeds the maximum allowable headworks loading.

Table 21 of the enclosure shows the influent, effluent, and sludge goals based on the local limits reevaluation as adjusted in accordance with the comments above. The influent goal is the maximum allowable headworks loading converted to a concentration using the average POTW flow from the reevaluation. Based on the reevaluation, this is the influent level that should not be exceeded in order to prevent effluent, sludge, or inhibition problems. The effluent goal is the allowable headworks loading based on protection of water quality, adjusted by the removal assumed in the reevaluation, and converted to a concentration. The effluent goal is the theoretical "limit" that the effluent should meet in order to protect water quality. The sludge goal is the exceptional quality standard for land application of sludge, which was used as the sludge protection criteria in the reevaluation. Evaluating these goals against the actual monitoring data can help assess whether problems exist in the limits reevaluation.

Table 22 compares the influent, effluent, and sludge goals to the monitoring data in the

"POTW Monitoring Data" spreadsheet and highlights any exceedances in red bold. As shown on Table 22, this evaluation indicates that at the current influent levels there would be exceedances of both the influent and effluent goals for copper, selenium, PCBs, and bis (2-ethylhexyl) phthalate which occur at similar frequencies. For PCBs and bis (2-ethylhexyl) phthalate most or all of the influent and effluent results exceed the respective goals but this is based mainly on non-detectable data. While the PCBs analysis was done with a reasonably low detection level, the detection level for bis (2-ethylhexyl) phthalate should be lowered in future analyses. For copper and selenium the exceedances are based on results reported above the detection level which suggests that the calculated maximum allowable headworks loading for these pollutants make sense and that a reduction in the levels of these pollutants in the influent is necessary to consistently meet the goals and NPDES permit limits.

For arsenic, lead, mercury, zinc, and phosphorus Table 22 shows influent exceedances without corresponding effluent or sludge exceedances. This could be an indication that the influent goal, and therefore the calculated local limit, is more stringent than necessary to protect the influent and sludge and prevent interference. However, a closer look at the influent data included with the submission suggests that these exceedances may not be significant or could be the result of other issues. For lead, as discussed above, the removal rate was selected to maximize the maximum allowable headworks loading and therefore the influent goal, so it may not be possible to adjust this value further. For arsenic, lead, and mercury there were only one or two influent exceedances. Due to normal variations in monitoring data, one or two exceedances may not be significant. For phosphorus, nearly half of the influent results exceeded the influent goal. A review of the influent data shows that all of these exceedances occurred in January and February 2011 and are several times higher than any of the other influent results for phosphorus. The Authority should review its records to ensure that these phosphorus results were entered correctly and to determine if there are other influent results that show similar levels. It is noted that the nonindustrial data included with the submission shows levels that are similar to the lower influent values.

Westerly Treatment Plant

POTW Monitoring Data Spreadsheet

The data in the enclosed "POTW Monitoring Data" spreadsheet is generally the same as the data included in the Authority's submission, although as noted above, the data submitted with the Authority's 2013 annual report for the influent, effluent, and sludge was added. In addition, the Authority's handling of non-detectable results was reevaluated and revised in some instances. The recommended handling of the non-detectable values is shown in the enclosed spreadsheet using pink shading to indicate use of half the detection limit in place of non-detectable values and using green shading to indicate use of the detection limit in place of non-detectable values. In the enclosed spreadsheet, changes were made to the Authority's handling of non-detectable values for the influent data for arsenic, cadmium, chromium, cyanide, lead, mercury, selenium, and zinc, for the effluent data for arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, and zinc, and for the nonindustrial data for cyanide, lead, nickel, toluene, and xylene. Note that where the data only supported use of default removals, changes to the values were usually not made since it would not impact the final evaluation.

In addition, there were a number of sample results that I eliminated from the data set (grey shaded cell with an "X" after the result). Sample results in addition to those eliminated by the Authority were eliminated using this method on the influent (chromium, mercury, molybdenum, and nickel), the effluent (copper and mercury), the sludge (arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc), and the nonindustrial (phosphorus). In addition, I reevaluated the Borough's elimination of data points using this same methodology and recommend that the Borough use several of the values that it had eliminated from the data sets. Sample results were used based on this methodology for cadmium (sludge), chromium (sludge), selenium (influent), zinc (sludge), and toluene (hauled). Note that for hauled waste I generally do not recommend elimination of "outliers" because POTWs often receive different types of hauled wastes from different sources and these wastes can vary significantly. A much larger data set is required to eliminate results in this way, as well as a different type of evaluation. I also eliminated sample results where the detection limit for non-detectable values was above the average for the pollutant and sample point (grey shaded cell with "<" before the result). This was done for arsenic (sludge – 9/9/10) and cadmium (influent and effluent – 2009, 2010, and 2011).

Local Limits Calculation Spreadsheet

Table 2b - Flow and Receiving Stream Data - The Authority used a POTW flow of 8.077 mgd and sludge flow to disposal of 2.366 dry metric tons per day. The report indicates that these flows are based on the 2008 through 2013 time frame for the POTW flow and 2013 for the sludge flow. In general, both flows should be based on data from the same time frame, and a longer-term average is more appropriate unless there is a specific reason to use a shorter time frame (e.g., significant change in flows based on service area growth). Based on the Authority's discharge monitoring report data in on our computer system I calculated the average effluent flow for the January 2008 through December 2013 time period and obtained a flow of 7.53 mgd. For sludge, although I did not have access to the reported sludge data for 2013, the average sludge flow for 2008 through 2012 based on the data in our computer system was 1.83 dry metric tons per day. A copy of each of the spreadsheets showing the data that I pulled from our computer system is enclosed, and the revised flows are used in the enclosed Local Limits Calculation spreadsheet. Note that for the sludge flow, the Authority should include the 2013 data that I did not have access to. In addition, based on the effluent flow data, it appears that the flow for calendar years 2012 and 2013 was significantly lower than the flows in the previous years. If this is because of a change in the system (e.g., elimination of some flows) it may be more appropriate to use only the flows from these two years. In any case, the Authority should verify the flows that it used in the evaluation, and ensure that all of the flows reflect the same time period. Since the Authority's evaluation does not include inhibition of anaerobic digesters, the sludge flow to the digesters is not needed.

Table 3 - NPDES Effluent Limits – The Authority's submission indicates that the potential permit limits used in the previous evaluation were updated based on PADEP's most recent Water Quality Protection Report. It does not appear that we have a copy of that report in our files, but most of the values used by the Authority are fairly close to the values used in the previous submission and therefore appear to be appropriate. The one exception is selenium. For this pollutant, the Authority's submission uses a value of 0.006808 which is an order of magnitude lower than the value used in the previous submission. The Authority should therefore review

and verify this value.

Based on the changes that I made to the handling of the influent, effluent, and sludge monitoring data (see comments under "POTW Monitoring Data Spreadsheet"), the removal rates used in the local limits calculations were revised. In addition, the Authority's selection of the removal rate used in the evaluation was reviewed and revised in some cases. The recommended selection of removal rate for each pollutant is shown in the "Select Removal Efficiency" column in Table 3 of the enclosed spreadsheet. The enclosed spreadsheet changed the Authority's selected removal to the influent/sludge removal for antimony. Note that for cadmium and selenium there is influent and sludge data available that could be used for calculation of a removal rate. However, use of the influent/sludge removal results in a negative local limit and therefore the Authority's selection of the default removal is acceptable. The enclosed spreadsheet changes the Authority's selected removal to the default removal for chromium, mercury, benzene, and ethylbenzene. Note that the default removals for benzene and ethylbenzene are entered as user entered values since they are not already built into the spreadsheet.

Table 4 - Chronic Water Quality Standards - As noted in the Authority's submission, PADEP calculated water quality based effluent limits for a number of pollutants and these water quality based effluent limits were used as NPDES limits in Table 3 of the spreadsheet. Where NPDES limits are used, use of water quality standards for those pollutants is not necessary because the calculated NPDES limits already address the water quality standards. Therefore the chronic water quality standards for those pollutants for which NPDES limits are listed in Table 3 have been deleted from Table 4.

Table 5 - Acute Water Quality Standards – For the same reason, the water quality standards for pollutants for which an NPDES limit was included in Table 3 have been deleted from Table 5 as well.

Table 6 - Human Health Water Quality Standards – As with Tables 4 and 5, the human health water quality standards for pollutants for which an NPDES limit was included in Table 3 have been deleted from Table 6.

Table 7 – Comparison of Water Quality Loadings – For cadmium the Authority eliminated the allowable headworks loading based on the chronic water quality standard and for mercury the Authority eliminated the allowable headworks loading based on the NPDES "limit" from further consideration because its NPDES permit does not include a specific limit for either pollutant. However, dischargers are required to comply with water quality standards in the absence of an NPDES limit and therefore the Authority must consider the water quality standards in the development of its local limits. For PCBs the Authority eliminated the allowable headworks loading based on the human health water quality standards because the nearest downstream drinking water intake is 143 miles away and the human health standard for this pollutant is based on cancer risk. However, the cancer risk standards in PADEP's human health water quality standards apply at the point of discharge and not at the downstream drinking water intake. Therefore these human health standards apply to the Authority's discharge and must be used in the evaluation.

Table 8 - Activated Sludge Inhibition – As with the Easterly Plant, the Authority used an activated sludge inhibition criterion of 0.1 mg/l for lead while the lowest criterion shown in the EPA guidance for lead is 1.0 mg/l. Since the criterion used by the Authority is lower than the EPA criterion it can be accepted. However, the Authority should provide a rationale for its use of the lower criterion. The enclosed spreadsheet uses an activated sludge inhibition criterion for lead of 1.0 mg/l.

The Authority's evaluation used a removal rate of 0% for all of the pollutants for which activated sludge inhibition allowable headworks loadings were calculated. If there is no primary treatment prior to the activated sludge units, this approach is appropriate. However, if there is primary treatment, then there typically would be some removal prior to the activated sludge units. Where no data exists for determination of these site specific removal rates, we allow the use of EPA's default removal rates, although since use of a removal of 0% would result in more stringent allowable headworks loadings, the Authority's approach could be accepted. Since the Authority used removals in the inhibition allowable headworks loading calculations in previous submissions, my understanding is that the Westerly Plant does include primary treatment. The enclosed spreadsheet uses available EPA default through primary removals in Table 8.

Table 10 - Nitrification Inhibition –For mercury and silver, the Authority used activated sludge inhibition criteria of 2 mg/l and 0.25 mg/l respectively, although there are no nitrification inhibition criteria shown in the EPA guidance for these pollutants. Since the criteria used by the Authority are lower than the EPA criteria they can be accepted. However, the Authority should provide a rationale for its use of these criteria. The enclosed spreadsheet keeps the Authority's nitrification inhibition criteria for both pollutants.

The Authority's evaluation used a removal rate of 0% for all of the pollutants for which nitrification inhibition allowable headworks loadings were calculated. If there is no primary treatment prior to the nitrification units, this approach is appropriate. However, if there is treatment prior to the nitrification units, then there typically would be some removal. Where no data exists for determination of these site specific removal rates, we allow the use of EPA's default removal rates, although since use of a removal of 0% would result in more stringent allowable headworks loadings, the Authority's approach could be accepted. Since the Authority used default primary removals in the nitrification inhibition allowable headworks loading calculations in previous submissions, my understanding is that the Westerly Plant includes primary treatment prior to the nitrification units. The enclosed spreadsheet uses available EPA default through primary removals in Table 10.

Table 13 - Comparison of Inhibition Loadings – As noted above, Table 13 of Version 4.0 of the EPA local limits spreadsheet selects the lowest of the calculated allowable headworks loadings based on inhibition and, if no inhibition or construction has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the POTW Monitoring Data worksheet) and selects the larger of the two as the allowable headworks loading based on inhibition. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the POTW Monitoring Data worksheet or otherwise not included in the influent data set. Based on the

addition of the 2013 monitoring data, the "other maximum influent concentration" column was updated for chromium, mercury, nickel, and selenium. If the Authority believes that these results were reported in error rather than simply unusual concentrations that actually occurred they should not be used in the evaluation.

Table 18 - Calculation of Local Limits - Table 18 shows the calculated maximum allowable headworks loading, maximum allowable industrial loading, and local limit for each pollutant based on the changes suggested above. As noted above, adjustments were made to the data handling for some pollutants on the non-industrial monitoring results, and the revised values used in the evaluation are shown on Table 18.

In addition, the nonindustrial concentrations for cadmium, mercury, selenium, and nitrogen were set equal to the average influent concentrations. Based on the calculated nonindustrial concentrations, the nonindustrial loading was greater than the maximum allowable headworks loading resulting in a negative local limit. Since the nonindustrial flow is nearly 98% of the total flow to the treatment plant, a significant discrepancy between the nonindustrial concentrations and the influent concentrations would also not be expected.

The enclosed spreadsheet includes a calculated limit that is negative for PCBs. Since it is impossible for a user to comply with a negative limit, it is not appropriate for the Authority to establish a negative limit. Note that for PCBs, the low water quality standard often results in negative limits, largely due to the number of non-detectable results. To address this issue many POTWs adopt a no discharge limit with compliance with the no discharge limit shown through a non-detectable result using EPA method 608 (the most sensitive PCBs method currently listed in 40 CFR 136). Given the uncertainty in the removal rate and background data for PCBs because of the non-detectable analytical results, it may be easier to justify this approach rather than a specific numerical limit.

Table 19 - Comparison of Limits - This table compares the existing and calculated local limits to highlight which limits would be made more stringent (green bold) and which less stringent (brown bold) based on the calculations. In addition, this table shows the limits proposed in the Authority's submission and highlights (in red bold) any proposed limits that are less stringent than the limits calculated based on the comments provided above. The proposed limits that are less stringent than the calculated limits would be of most concern in this evaluation (cadmium, copper, cyanide, mercury, nickel, silver, zinc, toluene, and PCBs).

Evaluation of Calculations - Table 20 shows the calculated maximum allowable headworks loading for each pollutant and compares this loading to the average and maximum loadings based on the Authority's monitoring data included in its submission. As noted above, a green highlighted value indicates that the current influent loading is near but does not exceed the maximum allowable headworks loading, while a red highlighted value indicates that the current influent loading exceeds the maximum allowable headworks loading.

Table 21 of the enclosure shows the influent, effluent, and sludge goals based on the local limits reevaluation as adjusted in accordance with the comments above, while Table 22 compares the influent, effluent, and sludge goals to the monitoring data in the "POTW Monitoring Data"

spreadsheet and highlights any exceedances in red bold. As shown on Table 22, this evaluation indicates that at the current influent levels there would be exceedances of both the influent and effluent goals for cadmium, selenium, PCBs, and bis (2-ethylhexyl) phthalate. For PCBs and bis (2-ethylhexyl) phthalate most or all of the influent and effluent results exceed the respective goals but this is based mainly on non-detectable data. While the PCBs analysis was done with a reasonably low detection level, the detection level for bis (2-ethylhexyl) phthalate should be lowered in future analyses. For selenium the exceedances are based on results that are mainly reported above the detection level. A closer look at the data indicates that the results from calendar year 2011 and earlier are reported with significantly higher levels of selenium than the results for 2012 and 2013. The Authority should investigate the reasons for this discrepancy as a way to ensure that the more recent lower levels continue. For cadmium, the influent exceedances are reported as values above detection, while many of the effluent exceedances are reported as values below detection. The reported result for December 11, 2103 appears to have used a lower detection level that was below both the influent and effluent goals and therefore the Authority should have its lab continue to use this lower detection in future cadmium monitoring.

For lead, BOD_5, and total nitrogen Table 22 shows influent exceedances without corresponding effluent or sludge exceedances. This could be an indication that the influent goal, and therefore the calculated local limit, is more stringent than necessary to protect the influent and sludge and prevent interference. However, due to normal variations in monitoring data, one or two exceedances may not be significant.

Please provide a response to the issues raised above, as well as a revised limits reevaluation as appropriate. If you have any questions regarding this matter, please contact me at 215-814-5790.

Sincerely,

John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division

Enclosures

cc: James Baird, Gwin, Dobson & Foreman (w/enclosures)
Maria Bebenek, PADEP Southcentral Region (w/out enclosures)
Ron Furlan, PADEP Central Office (w/out enclosures)

GD&F
GWIN
DOBSON &
FOREMAN
CONSULTING ENGINEERS

June 13, 2014

Mr. John Lovell
Pretreatment Coordinator
US EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

RE: Altoona Water Authority - Pretreatment Program
NPDES Nos. PA0027014 and PA 0027022

Dear Mr. Lovell:

Please find attached two updated US EPA Region III's Local Limits Excel spreadsheets containing the proposed local pretreatment limits for each of Altoona Water Authority's wastewater treatment plants (WWTP), that have been previously provided to Gwin, Dobson & Foreman (GD&F) by you. Also attached are two Excel spreadsheets containing a summary of the proposed local limits. These spreadsheets have been updated as part of our evaluation and the charges are described below.

Monitoring Data Worksheets

As part of this update, the monitoring data worksheets were reviewed and edited. Quarterly sampling data for 2012 were added to the worksheets and the formulas were updated. For the Easterly WWTP, the non-detectable sample results were initially set to the detection limits and some of the values excluded from the calculations were evaluated and adjusted. A number of negative limit values were obtained. The non-detectable sample results were then set to fifty percent (50%) of the detection limits. For the Westerly WWTP, the non-detectable sample results were set to fifty percent (50%) of detection limits and some the values excluded from the calculations were evaluated and adjusted. Some of the monitoring data levels of detection were as low as available by current analytical methods.

Limits Calculation Worksheets

The limits calculation worksheets were evaluated, adjusted, and updated. For Table 2a and 2b, stream flow data, such as $Q_{7\text{-}10}$ values and mix factors, NPDES Permit Limits, and potential permit limits from PA DEP's PENTOXSD Model Reports were reviewed from PA DEP's latest Water Quality Protection Reports for each NPDES Permit. For the POTW flows, the average POTW flow from 2008 to 2013 was used. The IU flows were the sum of the permitted flow for each WWTP. The sludge information was taken from the 2013 Chapter 94 Wasteload Management Report. In Table 3, the actual NPDES Permit limits are in bold font, and the potential limits calculated by the PENTOXSD Model are in italic font. The removal efficiencies were selected based on parameter fate and efficiencies. In Table 4, the stream concentrations for the Easterly WWTP were not able to be documented and some of the values did not appear to be realistic background concentrations. These were removed from the calculations. In Table 4, the stream concentrations for the Westerly WWTP were not able to be documented, and the values which did not appear to be realistic background concentrations were removed from the calculations.

In Table 7 for the Easterly WWTP, the chronic headwork loading calculations for cadmium and copper were overridden. Cadmium is not regulated in the NPDES Permit Limit. Copper is a regulated NPDES Permit Limit, which is greater than the chronic headwork loading calculation. In Table 7 for the Easterly WWTP, the human health headwork loading calculations for antimony and bis(2-ethyl hexyl) phthalate were overridden since the nearest public water supply is approximately 121 miles downstream of outfall 001. In Table 7 for the Westerly WWTP, the chronic headwork loading calculations for cadmium and mercury were overridden. Cadmium and mercury are not regulated in the NPDES Permit Limits. In Table 7 for the Westerly WWTP, the human health headwork loading calculations for PCBs were overridden since the nearest public water supply is approximately 143 miles downstream of outfall 001.

In Table 8, the activated sludge inhibition level for lead was adjusted. In Table 10, the nitrification inhibition level for mercury and silver was adjusted. In Table 17, the WWTP design parameters were included for biochemical oxygen demand, total suspended solids, ammonia-nitrogen (based on 75% of the TKN design value), total phosphorus, and total nitrogen (based on 100% of the TKN design value). The spreadsheets were adjusted to use the design parameters for the calculations of these conventional limits. In Table 18, the safety factors and growth allowance factors were set.

In Table 19, the proposed local limits were entered into the spreadsheets. For the Easterly WWTP, the selenium limit could not be achieved, and a local limit was set at 5 ug/l, compared to the current limit of 40 ug/l. Local limits were established for the conventional parameters of biochemical oxygen demand, total suspended solids, ammonia-nitrogen, total phosphorus, and total nitrogen. However, financial surcharge limits will be established for these conventional parameters at lower concentrations as these parameters impact the cost of operation of the WWTPs.

We believe these proposed local limits will protect the WWTPs' operation and the receiving streams. If you have any questions regarding these proposed limits or their development, please contact us. We appreciate your continued cooperation in this matter.

Sincerely,
GWIN, DOBSON & FOREMAN, INC.

James K. Baird
Senior Process Engineer

JLB/mad
13038/Ltr/US EPA_Pretreatment_5-21-14.doc
cc: Mark Perry, AWA
Ryan Beasom, AWA
File - 13038

Lovell, John

From: Lovell, John
Sent: Tuesday, April 29, 2014 5:17 PM
To: 'jim l. balliet'
Cc: Beasom, Ryan; Perry, Mark; James K. Baird
Subject: RE: Altoona Water Authority

Categories: EZ Record - Shared

That seems acceptable to me. I will try to turn it around as quickly as possible once I get it.

John Lovell
Pretreatment Coordinator
USEPA Region 3
1650 Arch Street
Philadelphia, PA 19103-2029
215-814-5790
215-814-2318 (fax)

From: jim l. balliet [mailto:jballiet@GDFEngineers.com]
Sent: Tuesday, April 29, 2014 4:38 PM
To: Lovell, John
Cc: Beasom, Ryan; Perry, Mark; James K. Baird
Subject: RE: Altoona Water Authority

Hi John,

I agree. We do not want to wait another year to finalize these limits since there are several significant reductions in the proposed limits that we need to take effect sooner than later. We will submit our proposed changes for your review and consideration within the next two to three weeks. Once accepted by you, the Authority should be able to adopt the new limits at their next monthly Board meeting. If at all possible, we would like to have the new limits in place by July so we can issue amended permits this summer.

Please confirm if you agree with this approach and schedule.

Thank you,

Jim.

James L. Balliet
Director of Facilities Planning
Corporate Secretary
GWIN, DOBSON & FOREMAN, INC.
3121 Fairway Drive
Altoona, PA 16602
PH: 814.943.5214
FAX: 814.943.8494
EMAIL: *jballiet@gdfengineers.com*

From: Lovell, John [mailto:Lovell.John@epa.gov]
Sent: Tuesday, April 29, 2014 8:42 AM
To: jim l. balliet
Subject: RE: Altoona Water Authority

I think there are a couple of issues that cause problems here. First, since you don't really have a time frame for when the permits will be reissued, so you're asking for an indefinite extension which is difficult to grant. The other issue is that after the permits are reissued we would be looking for a complete update on the local limits, including an update of the data used in the evaluation. That means that the changes after the permit is issued are more significant than simply changing any revised NPDES limits. Even if you have enough treatment plant data from the quarterly monitoring to redo the removal rates you'd likely still need to collect additional background data to update that information. In addition, if the review of the list of pollutants to be included in the evaluation indicated that you needed to add a pollutant or two that would mean you would need time to collect treatment plant data for those pollutants. So really with the review and potential comments on the new submission, rather than simply waiting a couple of months for the Authority to adopt the limits we could be looking at a year or more before the limits would be changed. Given that there seem to be some fairly significant reductions in the proposed limits, that seems like a long time to wait.

My suggestion would be that if there are some changes that the Authority would like to make before adoption of the limits you should submit those changes now. With acceptance of those change we could restart the adoption clock, but I'm not sure that it makes sense to push it back a year or more.

John Lovell
Pretreatment Coordinator
USEPA Region 3
1650 Arch Street
Philadelphia, PA 19103-2029
215-814-5790
215-814-2318 (fax)

From: jim l. balliet [mailto:jballiet@GDFEngineers.com]
Sent: Friday, April 25, 2014 11:24 AM
To: Lovell, John
Subject: Altoona Water Authority

Hi John,

I know we have been playing phone tag the past few weeks but I need to discuss the current status of Altoona's Local Limits Evaluation.

As we previously discussed, the Authority asked our firm to re-evaluate their local limits due to the retirement of George Boliski at the end of 2013 and their continued difficulty in meeting their strict NPDES limits for certain metals.

As you know, the Authority has been operating under expired NPDES permits at both facilities since January 31, 2013. In December of 2013, we were told by Pascal Qwedza of DEP that the permits would be issued by the end of January, 2014. We did not receive the permits so we called him the first week of February and he said they would not be issued until spring. To date, we have not received our permits. Furthermore, he could not tell us if any of our limits would change or if additional parameters would be included.

In the past few months we have reviewed the local limit calculations and made some minor changes that reduces certain limits that we feel are more protective of the Authority's system and increases their ability to meet their strict NPDES limits for certain parameters. We would like to defer submission of these revisions to your office until the NPDES permits are issued by DEP in the event they will require further changes.

Our immediate concern is that you accepted the limits submitted by George Boliski on October 29, 2013 and next week is six months from that acceptance. The Authority would like to request an extension from you to give us the necessary time to receive the NPDES permits from DEP and re-submit the revised limits to you for further consideration.

If there are no changes, we could submit the revised limits immediately after our receipt of the NPDES permits. If the limits have changed, we feel we could submit the revised limits to you within one month from our receipt of the permits. Unfortunately, we have no control over DEP's issuance of these permits.

The Authority wants to finalize their local limits as soon as possible but they do not want to adopt limits that may change as a result of their new permits.

We appreciate your consideration of this request for a time extension and your continued cooperation with this matter. If you have any questions or wish to discuss this further, please contact me at my office at 814-943-5214 or my cell at 814-931-5752.

Thank you,

Jim.

James L. Balliet
Director of Facilities Planning
Corporate Secretary
GWIN, DOBSON & FOREMAN, INC.
3121 Fairway Drive
Altoona, PA 16602
PH: 814.943.5214
FAX: 814.943.8494
EMAIL: *jballiet@gdfengineers.com*

ALTOONA WATER AUTHORITY

November 26, 2013

Mr. John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Local Limits Calculations, Altoona Water Authority's Easterly & Westerly Wastewater Treatment
NPDES PA0027014 & PA0027022

Dear Mr. Lovell,

I have reviewed your letter dated October 29, 2013. This letter is submitted as conformation to the following.

1. The goals and monitoring frequency as established for the influent, effluent and sludge
2. Agree that the AWA inter-municipal agreements with Logan and Allegheny Townships allows the Altoona Water Authority to implement these limits and adoption of the limits is not required.
3. The Resolution was prepared to be introduced at the Board Meeting of November 21st. A copy of your October 29th letter was attached to insure the approval within the six month period.

If there are any questions or needed correspondence, please contact Ryan Beasom at 814-949-2246 ext. 2202 or at rbeasom@altoonawater.com as my last working day will be December 31, 2013.

Respectfully,

George C. Boliski
Environmental Services Manager

Jlovell

From: Jlovell
Sent: Wednesday, October 30, 2013 12:02 PM
To: 'jballiet@gdfengineers.com'
Subject: Altoona Local Limits Spreadsheets
Attachments: Altoona East Submission 5 Redone.xlsx; Altoona West Submission 5 Redone.xlsx; Spreadsheet Users Manual.docx

Let me know if you have any questions.

John Lovell
Pretreatment Coordinator
USEPA Region 3
1650 Arch Street
Philadelphia, PA 19103-2029
215-814-5790
215-814-2318 (fax)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

OCT 2 9 2013

Mr. George C. Boliski
Environmental Services Manager
Altoona Water Authority
Wastewater Treatment Operations
144 Westerly Treatment Plant Road
Duncansville, Pennsylvania 16635-7800

Re: Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Boliski:

I have completed review of the revisions to the Authority's local limits reevaluations for the Easterly and Westerly Treatment Plants submitted by e-mail on October 25, 2013. Based on this review, the proposed revisions to the local limits are acceptable. Enclosed for your use are four tables showing the influent, effluent, and sludge goals for the Authority's two treatment plant based on the reevaluation, along with the loadings and removals used to develop the goals. These goals will be used in the evaluation of the monitoring data submitted with future annual reports. In addition, the tables show the monitoring frequency for each pollutant. A monitoring frequency of "4" for the influent, effluent, and sludge generally means that the Authority has proposed a local limit for that pollutant. An influent and sludge monitoring frequency of "1" and an effluent monitoring frequency of "0" indicates a pollutant that is a priority pollutant and for which a maximum allowable headworks loading was calculated, but for which no limit was proposed. A monitoring frequency of "0" for all sampling points indicates a pollutant that is not a priority pollutant but for which an evaluation was done and no limit was proposed. Note that surcharge levels do not count as limits for monitoring purposes. Please let me know if you believe that any of the goals or monitoring frequencies are not correct.

Since some of the proposed local limits are less stringent than the currently approved local limits, the revision to the limits is considered a substantial program modification under 40 CFR 403.18(b)(2). Prior to formal approval by EPA, the proposed limits will need to be adopted by the Authority. Based on my understanding of the ordinances for the Townships of Allegheny and Logan, the Townships have authorized the Authority to develop and implement the local limits and therefore adoption of the revised limits by the Townships does not appear to be necessary. If you do not agree with this assessment, please let me know.

In addition, please note that the Authority's NPDES permits, issued on January 29, 2008, require that the Authority adopt the revised limits within six months of acceptance by EPA (this letter). The NPDES permit also requires that, if necessary, the Authority notify its contributing municipalities of the need to adopt the revised limits within the same six month period. If you

agree with my assessment that the adoption of the limits by the Townships is not necessary for enforcement of the limits, then the notification to the Townships is not required. After receipt of copies of the adopted limits for the Authority, EPA must provide for a 30-day public comment period of our intent to approve the new limits. Upon completion of the 30-day comment period, EPA would formally approve the limits unless significant adverse public comments were received.

The Authority should quickly proceed with the adoption of the revised limits. To demonstrate compliance with the NPDES permit, it is recommended that the Authority submit a copy of the ordinance adopting the limits within the six month time frame.

Please provide the adopted limits when they are available. If you have any questions regarding this matter, please contact me at 215-814-5790.

Sincerely,

John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division

Enclosures

cc: Maria Bebenek, PADEP Southcentral Region (w/out enclosures)
Ron Furlan, PADEP Central Office (w/out enclosures)

Jlovell

From: George Boliski [GBoliski@altoonawater.com]
Sent: Tuesday, October 29, 2013 6:42 AM
To: Jlovell
Subject: RE: Easterly & Westerly Local Limit Submissions

The current limits for ethylbenzene, toluene, and xylene for both plants have been indicated as monitor and report within the permits issued to groundwater remediation projects since those limits were calculated very high. This was done before you being assigned Altoona. Also, there are no existing groundwater remediation projects open at this time. I wish to retain the monitor and report if permissible.

The surcharge limits for BOD & TSS are listed in the AWA's Wastewater Charge System requirements under Surcharge Calculations. These surcharge levels should remain.

George C. Boliski
Environmental Services Manager
Altoona Water Authority
144 Westerly Treatment Plant Road
Duncansville, PA 16635-7814
814-949-2246 x 2202
gboliski@altoonawater.com

From: Jlovell [mailto:Lovell.John@epa.gov]
Sent: Monday, October 28, 2013 4:56 PM
To: George Boliski
Subject: RE: Easterly & Westerly Local Limit Submissions

I looked at the revisions to the local limits calculations that you made and I think they are acceptable. I just have a couple of quick questions in terms of adoption of the limits.

You list proposed limits in Table 19. Some of the proposed limits are pretty high (ethylbenzene and toluene for the east plant and ethylbenzene, toluene, and xylene for the west plant). Are you planning on adopting those high limits? You could probably justify dropping them since they are so high.

You list existing limits for BOD and total suspended solids but I didn't see those limits in your regulations. Are those limits or are they surcharge levels? If they are intended to be surcharge levels you just need to make sure that they are not included as limits. If they are limits, can you let me know if they are in your regulations and if so where?

Thanks.

John Lovell
Pretreatment Coordinator
USEPA Region 3
1650 Arch Street
Philadelphia, PA 19103-2029
215-814-5790
215-814-2318 (fax)

From: George Boliski [mailto:GBoliski@altoonawater.com]
Sent: Friday, October 25, 2013 1:18 PM
To: Jlovell
Subject: Easterly & Westerly Local Limit Submissions

John,

Attached are the Easterly and Westerly Local Limit spreadsheets, example letter to the 27 dental offices in Altoona, and the cover letter.

George C. Boliski
Environmental Services Manager
Altoona Water Authority
144 Westerly Treatment Plant Road
Duncansville, PA 16635-7814
814-949-2246 x 2202
gboliski@altoonawater.com

Jlovell

From: George Boliski [GBoliski@altoonawater.com]
Sent: Friday, October 25, 2013 1:18 PM
To: Jlovell
Subject: Easterly & Westerly Local Limit Submissions
Attachments: Altoona East Submission Redone - EPA v 3.3.xls; Altoona West Submission Redone - EPA v 3.3.xls; Blair Dental Associates.doc; Local Limits reply 2013 10-25-2013.doc

John,

Attached are the Easterly and Westerly Local Limit spreadsheets, example letter to the 27 dental offices in Altoona, and the cover letter.

George C. Boliski
Environmental Services Manager
Altoona Water Authority
144 Westerly Treatment Plant Road
Duncansville, PA 16635-7814
814-949-2246 x 2202
gboliski@altoonawater.com

ALTOONA WATER AUTHORITY

October 25, 2013

Mr. John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Local Limits Calculations, Altoona Water Authority's Easterly & Westerly Wastewater Treatment
NPDES PA0027014 & PA0027022

Dear Mr. Lovell,

On behalf of the Altoona Water Authority enclosed is the Altoona East submission and Altoona West submission spreadsheet for the headworks evaluation on version 3.3. The following indicates what was taken from your spreadsheets and comment letter of July 1, 2013 and addition comments discussed during our telephone conversation of October 23rd.

Easterly WWTF

Monitoring Data Spreadsheet

The copper values of 0.109 mg/l on the Monitoring Data were revised as indicated.

Local Limits Calculation Spreadsheet

Table 2b: The flow of 5.6 MGD was used rather than the previous 5.8 MGD in these calculations.
The sludge flow to disposal of 1.3 dry metric tons was used rather than the previous 2 dry metric tons.
The revised industrial flow reflects the closure of Juniata Fabrics in 2012.

Table 3: The Removal Efficiencies have been changed to meet your recommendations.

Table 17: The Design Loadings for the Easterly Facility are per our consultant GD&F are:

NH3	755 lbs/day
BOD	6400 lbs/day
TSS	8550 lbs/day
N (T)	1120 lbs/day
P (T)	190 lbs/day

Table 18: By using the above data, these changes were made during our telephone conversation or your comments in the July 1, 2013 letter.

The ammonia safety factor was removed which calculated a local limit of 22.7 mg/l. The BOD safety factor was lowered to 5% which calculated a local limit of 319 mg/l which is close to our current limit of 360 mg/l. TSS safety factor lowered to 25% which calculated a local limit of 402 mg/l which is close to our current limit of 450 mg/l. The phosphorus safety factor was removed which calculated a local limit of 4.09 mg/l. The nitrogen calculated to a local limit of 79.8 mg/l with no other changes required.

The Nonindustrial Concentrations for Ammonia and Nitrogen were changed to the influent concentration as indicated in the letter.

Comment: The average influent level at the Easterly Facility for BOD is between 78 and 175 mg/l per day with a 97% removal efficiency and TSS is 50 to 200 mg/l per day with 96% removal efficiency, the AWA wishes to maintain the current 360 mg/l BOD and 450 mg/l TSS local limit.

Westerly WWTF

Monitoring Data Spreadsheet

The zinc values eliminated as outliers on the Monitoring Data were revised as indicated.
The cadmium influent non-detectable results were eliminated as indicated.

Local Limits Calculation Spreadsheet

Table 2b: The flow of 7.84 MGD was used rather than the previous 5.75 MGD in these calculations. The sludge flow to disposal of 1.83 dry metric tons was used rather than the previous 3.04 dry metric tons.

Table 3: The Removal Efficiencies have been changed to meet your recommendations

Table 8: Zinc removal efficiency changed to meet recommendation.

Table 10: Zinc and cadmium removal efficiency changed to meet recommendation.

Table 13: The Design Loadings for the Westerly Facility are per our consultant GD&F are:

NH3	1095 lbs/day
BOD	11858 lbs/day
TSS	14229 lbs/day
N (T)	1698 lbs/day
P (T)	340 lbs/day

Table 17: By using the above data, these changes were made during our telephone conversation or your comments in the July 1, 2013 letter.

The ammonia safety factor was removed which calculated a local limit of 90.35 mg/l. The BOD safety factor was lowered to 25% which calculated a local limit of 244 mg/l which is lower than our current limit of 360 mg/l. TSS safety factor was not changed which calculated a local limit of 690 mg/l which is above our current limit of 450 mg/l. The phosphorus safety factor was was not changed which calculated a local limit of 12.18 mg/l. The nitrogen calculated to a local limit of 100 mg/l with no other changes required.

As discussed on the telephone with regards to mercury, attached is a copy of the letter that will be sent to the 27 Dental Offices within the Easterly and Westerly drainage areas. An inspection and discussion will be conducted to inform them of the upcoming regulations.

With respect to the PCB local limit, the AWA will adopt a no detectable using EPA method 608 as listed in 40 CFR 136- Guidelines Establishing Test Procedures for the Analysis of Pollutants.

The Nonindustrial Concentrations for Nitrogen was changed to the influent concentration as discussed during our telephone conversation.

Comment: The average influent level at the Westerly Facility for BOD is between 48 and 188 mg/l per day with a 98% removal efficiency and TSS is 34 to 153 mg/l per day with 97% removal efficiency, the AWA wishes to maintain the current 360 mg/l BOD and 450 mg/l TSS local limit.

If there are any questions, please call or e-mail.

Respectfully,

George C. Boliski
Environmental Services Manager

August 6, 2013

Blair Dental Associates
200 Union Avenue
Altoona, PA 16602

Re: Altoona Water Authority's Industrial Pretreatment Program

Dear Valued Customer,

The Altoona Water Authority's Industrial Pretreatment Program was approved by the Environmental Protection Agency (EPA) in June 1984. As an integral part of the program, any commercial and/or industrial users connected to the wastewater treatment facilities within the City of Altoona, sections of Logan Township and sections of Allegheny Township must meet the requirements of the Altoona Water Authority's industrial wastewater regulations and EPA General Pretreatment Regulations (40 CFR 403). The Altoona Water Authority's Wastewater System Regulations require an industry to be permitted, wastewater discharge sampling and analyzed for the pollutants that will harm or pass-through the treatment facility, and yearly inspections conducted at the industry that wastewater is being discharged.

Your offices currently discharge to a sewer located in Section "C" of Altoona that discharges to the AWA's Pleasant Valley outfall sewer that leads to the Westerly Wastewater Treatment Facilities. The Environmental Protection Agency (EPA) is proposing Dental Waste Regulations for both Silver and Mercury parameters. Although these regulations are only proposed at this time and may take months for promulgation, the AWA is notifying all Dental facilities within our drainage area as part of our local limits recalculations.

Enclosed is data from EPA on the Dental Amalgam Effluent guidelines and a memorandum of understanding between EPA and the American Dental Association (ADA) on mercury wastes from Dental offices.

To ascertain the nature of your business and to determine when your facility will be required to have an industrial wastewater contribution permit, a visit and tour of the facility will need to be scheduled and conducted by the end of August 2013. Any questions pertaining to the Altoona Water Authority's Industrial Pretreatment Program may be asked at that time.

I may be reached at 949-2246 ext. 2202 between the hours of 7:00 AM and 3:00 PM daily, if you have any other questions or wish to set another date and time for a site visit.

Respectfully,

George C. Boliski
Environmental Services Manager

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JUL 01 2013

Mr. George C. Boliski
Environmental Services Manager
Altoona Water Authority
Wastewater Treatment Operations
144 Westerly Treatment Plant Road
Duncansville, Pennsylvania 16635-7800

Re: Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Boliski:

I have completed the review of the Authority's revised local limits evaluations for the Easterly and Westerly treatment plants submitted on May 16, 2013. Based on this review, additional revisions will be needed before the evaluations will be acceptable. Enclosed are two printouts (one for each treatment plant) of a spreadsheet used to calculate local limits in which the data inputs are revised as discussed below. These printouts are not intended to be used by the Authority directly, but are only included as an indication of the effect of the changes based on my comments. The comments below are presented in the order that the data is presented in the "Local Limits Calculation" spreadsheet for each facility. As shown at the bottom of the first column in the "POTW Monitoring Data" spreadsheet, green and pink shaded boxes in this spreadsheet highlight any data reported as non-detectable and indicate how those data were handled for purposes of the calculations. Grey shaded boxes highlight any data that was excluded from the data set because it did not appear to be consistent with the rest of the data set for that pollutant. Note that the enclosed printout is based on Version 4.0 of the EPA local limits spreadsheet while the Authority's submission was made using Version 3.3 of the spreadsheet. Although there were a few enhancements made in Version 4.0, these enhancements generally do not impact the calculations made by the Authority using Version 3.3.

Easterly WWTF

POTW Monitoring Data Spreadsheet

I did not make changes to the Authority's handling of the monitoring data for most pollutants. However, for copper I revised the influent data set so that the June 25, 2010 and September 21, 2011 values (both 0.109 mg/l) were used in the evaluation. These data points were eliminated by the Authority as outliers. A review of the data set indicates that they are "secondary" outliers (i.e., only identified as outliers after the outliers from the original evaluation of the data set were eliminated). Eliminating these two data points lowered the removal rate to the extent that the calculated local limit became negative and therefore it may not be inappropriate to eliminate them.

Local Limits Calculation Spreadsheet

Table 2b – POTW and Receiving Stream Data – The Authority's submission reduced the POTW flow from 5.8 million gallons per day to 4.1 million gallons per day. The cover letter to the Authority's submission indicates that this is because 2012 was a very dry year. Note that the POTW flow used in the evaluation should represent the anticipated flow for the next several years, and is generally calculated based on the POTW flow from the past several years. Therefore use of the flow from 2012 would be inappropriate since it does not represent the typical flow expected at the Authority's treatment plant. Enclosed is a table that shows the Easterly treatment plant flows from January 2008 through December 2012. The average flow for this period was calculated to be 5.6 million gallons per day, and this flow is used in the enclosed spreadsheet. This flow is slightly lower than the flow used in the Authority's previous submission.

The Authority also revised the sludge flow to disposal from 1.3 dry metric tons per day to 2 dry metric tons per day. The basis of this change is unclear. However, based on the Authority data submitted with its sludge reports (see enclosed Altoona East Sludge Flows table), the average sludge production at the Easterly treatment plant for the period of calendar years 2008 through 2012 is 1.3 dry metric tons per day. This value is used in the enclosed spreadsheet, and is the same as the value used in the Authority's previous submission.

The Authority also revised the industrial user flow and the hauled waste flow, and the Authority's revised flows are used in the enclosed spreadsheet. If these revisions are based on new data that is expected to be representative of conditions in the foreseeable future then they are acceptable. If these revised values are only expected to be representative of a very dry 2012, then the Authority should revise the values to be representative of the flows expected in the foreseeable future.

Table 3 - NPDES Effluent Limits – Based on the revised flows used in the enclosed spreadsheet, any removal that is calculated based on the influent and sludge data has been changed since the influent/sludge removal is calculated using masses rather than concentrations.

The Authority's revised submission uses the influent/effluent removal for chromium rather than the influent/sludge removal suggested in my previous review. Although no reason was given, it appears that based on the revised flows used in the Authority's submission, the calculated influent/sludge removal was greater than 100%. However, as noted above, it appears that the revised flows used by the Authority are not appropriate. Based on the flows used in the enclosed spreadsheet, the influent/sludge removal for chromium is just under 74%. Since there are almost no usable effluent values for chromium, it is recommended that the influent/sludge removal be used.

The Authority's revised submission uses the default removal for copper rather than the influent/effluent removal previously used. Again, no reason was given, but it appears that use of the influent/effluent removal with the 2012 flows resulted in a negative local limit for copper. However, as noted above, it appears that the 2012 flows used by the Authority are not

appropriate. Using the flows shown in the enclosed spreadsheet along with the "secondary" influent outliers as discussed above results in an influent/effluent removal of just over 78%. This removal is calculated using actual data, and is higher than the other two removals (influent/sludge and daily average) calculated in the spreadsheet, but is still lower than the default removal. Given that the default removal is higher than any of the removals calculated using actual data, it appears that the default removal is inappropriate for use in the Authority's submission. Therefore the removal using the influent and effluent data is recommended.

In my letter of July 23, 2012 I recommended a different approach for the determination of the removal for lead. The Authority's submissions since then adopted this approach. Based on the slightly revised POTW flow used in the enclosed spreadsheet, the removal for lead was recalculated and adjusted slightly. The enclosed spreadsheet uses a removal for lead of 74.409% that was determined in the same manner as described in my July 2012 letter.

Table 13 - Comparison of Inhibition Loadings - Table 13 of the spreadsheet selects the lowest of the calculated allowable headworks loadings based on inhibition and, if no inhibition has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the "POTW Monitoring Data" worksheet). The spreadsheet then selects the larger of the two as the allowable headworks loading based on inhibition. Where no inhibition has occurred, the treatment plant has demonstrated that it can accept these measured concentrations without inhibition, and therefore it may not be appropriate to select a lower allowable headworks loading based on inhibition for that pollutant. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the "POTW Monitoring Data" worksheet or otherwise not included in the influent data set. Note that this adjustment assumes that no inhibition has occurred at the Authority's treatment plant. If the Authority has experienced inhibition at the treatment plant, the maximum allowable headworks loading should not be adjusted based on the maximum influent concentration. Note also that adjustments that were made by the Authority in the influent data impacted some of the maximum influent concentrations that were automatically transferred to this table. Therefore the maximum influent concentration for arsenic, chromium, copper, lead, mercury, molybdenum, nickel, zinc, ethylbenzene, toluene, and xylene were manually entered in the enclosed spreadsheet based on maximum values that were eliminated from the influent data sets for these pollutants, although this data only impacted the allowable headworks loading based on inhibition for copper and zinc, and does not impact the final local limits. The Authority chose not to use these eliminated influent values in its inhibition calculations and that approach is acceptable.

Table 17 - Comparison of All Allowable Headworks Loadings - Table 17 selects the most stringent of the calculated allowable headworks and design loadings where applicable. This most stringent allowable loading is then used as the maximum allowable headworks loading in order to determine the appropriate local limits. As noted in my letters of July 23, 2012 and March 11, 2013, it appears that the "design loadings" entered by the Authority in its previous spreadsheets may have been the actual average influent loadings used for the design rather than the loading that the treatment plant was designed to handle. The Authority's most recent submission revised the design loadings and used the loadings that were included in my previous spreadsheets. However, as noted in my previous letters, I did not have information available on the design loadings for ammonia and total nitrogen, and my March 11 letter explained where the "design" loadings in my previous spreadsheet were obtained. The Authority's most recent submission did not indicate whether actual design loadings

for ammonia and total nitrogen exist, so the Authority should review these values for these two pollutants to ensure that the value entered in the spreadsheet is the loading that the treatment plant is designed to handle rather than the actual average influent loadings used for the design, especially considering the issue described below for these two pollutants.

Table 18 – Calculation of Local Limit - Based on the changes described above, the calculated local limits for ammonia and total nitrogen were negative. This could be an indication that the "design" loading listed in the enclosed spreadsheet is not correct. However, it is also noted that the nonindustrial concentration for both of these pollutants is higher than the influent concentration, especially for total nitrogen where the calculated nonindustrial loading is actually higher than the calculated influent loading. While it is possible for the nonindustrial concentration to be higher than the influent concentration, the nonindustrial loading cannot be higher than the influent loading, and this could be another cause of the negative local limits. In order to address this issue, the enclosed spreadsheet uses the influent concentration as the nonindustrial concentration for these two pollutants.

After the adjustment to the nonindustrial concentration, the calculated local limit for ammonia was still negative, and the limit for copper was very low. For that reason I eliminated the safety factor for these two pollutants in the enclosed spreadsheet. While eliminating the safety factor is not often recommended, it is occasionally necessary to establish a limit that is more reasonable. If a higher design loading for ammonia is found, the safety factor for this pollutant should be included.

Westerly WWTF

POTW Monitoring Data Spreadsheet

I did not make changes to the Authority's handling of the monitoring data for most pollutants. However, for cadmium I eliminated the non-detectable results at the top of the influent column in order to make adjustments to the nonindustrial concentration (see discussion for Table 18 below). In addition, the Authority eliminated several of the higher nonindustrial values for zinc but did not provide an explanation. These values do not appear to be outliers and it does not appear to appropriate to eliminate them so they were kept in the evaluation. If the Authority believes that these values should be eliminated, please provide justification.

Local Limits Calculation Spreadsheet

Table 2b – POTW and Receiving Stream Data – The Authority's submission reduced the POTW flow from 7.93 million gallons per day to 5.75 million gallons per day. The cover letter to the Authority's submission indicates that this is because 2012 was a very dry year. As noted above, the POTW flow used in the evaluation should represent the anticipated flow for the next several years, and is generally calculated based on the POTW flow from the past several years. Therefore use of the flow from 2012 would be inappropriate since it does not represent the typical flow expected at the Authority's treatment plant. Enclosed is a table that shows the Westerly treatment plant flows from January 2008 through December 2012. The average flow for this period was calculated to be 7.84 million gallons per day, and this flow is used in the enclosed spreadsheet. This flow is slightly lower than the flow used in the Authority's previous submission.

The Authority also revised the sludge flow to disposal from 1.7 dry metric tons per day to 3.04 dry metric tons per day. The basis of this change is not clear. However, based on the Authority data submitted with its sludge reports (see enclosed Altoona West Sludge Flows table), the average sludge production at the Westerly treatment plant for the period of calendar years 2008 through 2012 is 1.83 dry metric tons per day. This value is used in the enclosed spreadsheet, and is slightly higher than the value used in the Authority's previous submission.

Table 3 - NPDES Effluent Limits – Based on the revised flows used in the enclosed spreadsheet, any removal that is calculated based on the influent and sludge data has been changed since the influent/sludge removal is calculated using masses rather than concentrations.

The Authority's revised submission uses the default (activated sludge) removal for copper, nickel, and silver rather than the influent/sludge removal suggested in my previous review. Although no reason was given, it appears that based on the 2012 flows used in the Authority's submission, the calculated influent/sludge removal was greater than 100%. However, as noted above, it appears that the 2012 flows used by the Authority are not appropriate. Based on the flows used in the enclosed spreadsheet, the influent/sludge removals for these pollutants are 87.54%, 56.35%, and 41.98% respectively.

The Authority's revised submission uses the default removal for zinc rather than the influent/effluent removal previously used. Again, no reason was given, but given that the default removal is significantly higher than any of the removals calculated using actual data, it appears that the default removal is inappropriate for use in the Authority's submission. Therefore the removal using the influent and effluent data is recommended.

Table 8 – Activated Sludge Inhibition – The Authority used a user entered removal of 0% for zinc. No explanation was given, but unless the Authority has a reason for doing this, it is recommended that the default (through primary) removal be used as was done for most of the other pollutants. The enclosed spreadsheet uses the default (through primary) removal for zinc.

Table 10 – Nitrification Inhibition – The Authority used the default (through activated sludge) removal for cadmium and zinc. Again, no explanation was given, but unless nitrification occurs in unit operations after the activated sludge unit it is inappropriate to use the default (through activated sludge) removals. In any case, since nitrification would not occur in different areas of the treatment plant depending on the pollutant being evaluated, the default removals selected should have the same basis for all of the pollutants. The enclosed spreadsheet uses the default (through primary) removals since it is my understanding that nitrification occurs in the activated sludge units at the Authority's treatment plant.

Table 13 - Comparison of Inhibition Loadings - Table 13 of the spreadsheet selects the lowest of the calculated allowable headworks loadings based on inhibition and, if no inhibition has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the "POTW Monitoring Data" worksheet). The spreadsheet then selects the larger of the two as the allowable headworks loading based on inhibition. Where no inhibition has occurred, the treatment plant has demonstrated that it can accept these measured concentrations without inhibition, and

therefore it may not be appropriate to select a lower allowable headworks loading based on inhibition for that pollutant. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the "POTW Monitoring Data" worksheet or otherwise not included in the influent data set. Note that this adjustment assumes that no inhibition has occurred at the Authority's treatment plant. If the Authority has experienced inhibition at the treatment plant, the maximum allowable headworks loading should not be adjusted based on the maximum influent concentration. Note also that adjustments that were made by the Authority in the influent data impacted some of the maximum influent concentrations that were automatically transferred to this table. Therefore the maximum influent concentration for copper, lead, mercury, molybdenum, nickel, silver, zinc, and PCBs were manually entered in the enclosed spreadsheet based on maximum values that were eliminated from the influent data sets for these pollutants, although this data only impacted the allowable headworks loading based on inhibition for copper and zinc. Since the final local limits calculated in the enclosed spreadsheet for these two pollutants are based on protection against inhibition, this adjustment impacts the final local limits. The Authority chose not to use these eliminated influent values in its inhibition calculations and that approach is acceptable, but would result in lower local limits for copper and zinc.

Table 17 - Comparison of All Allowable Headworks Loadings - Table 17 selects the most stringent of the calculated allowable headworks and design loadings where applicable. This most stringent allowable loading is then used as the maximum allowable headworks loading in order to determine the appropriate local limits. As noted in my letters of July 23, 2012 and March 11, 2013, it appears that the "design loadings" entered by the Authority in its previous spreadsheets may have been the actual average influent loadings used for the design rather than the loading that the treatment plant was designed to handle. The Authority's most recent submission revised the design loadings and used the loadings that were included in my previous spreadsheets. However, as noted in my previous letters, I did not have information available on the design loadings for ammonia and total nitrogen, and my March 11 letter explained where the "design" loadings in my previous spreadsheet were obtained. The Authority's most recent submission did not indicate whether actual design loadings for these pollutants exist, so the Authority should review these values for ammonia and total nitrogen to ensure that the value entered in the spreadsheet is the loading that the treatment plant is designed to handle rather than the actual average influent loadings used for the design, especially considering the issue described below for ammonia.

Table 18 – Calculation of Local Limit - Based on the changes described above, the calculated local limits for cadmium, ammonia and PCBs were negative. For ammonia, this could be an indication that the "design" loading listed in the enclosed spreadsheet is not correct. Since I do not have access to the design loadings for this pollutant, I eliminated the safety factor for ammonia in the enclosed spreadsheet. While eliminating the safety factor is not often recommended, it is occasionally necessary to establish a limit that is more reasonable. Before eliminating the safety factor, the Authority should check on the design loading used in its evaluation.

For cadmium, it appears that the negative local limit may be based on an artificially high nonindustrial concentration obtained using non-detectable results with relatively high detection levels. A review of the influent data indicates that there are three influent results that appear to have used a significantly lower detection level. For that reason, I eliminated all of the influent data that

used the higher detection levels, and used the resulting average influent concentration as the nonindustrial concentration. This resulted in a local limit above zero.

A negative local limit was also obtained for PCBs. This is fairly common because the water quality standards for PCBs are so low. Other POTWs have addressed this situation by adopting a no detectable amount limit for PCBs and defined compliance with this limit as a non-detectable result using EPA method 608 (the most sensitive method for PCBs listed in 40 CFR 136).

Note that the local limit calculated for mercury in the enclosed spreadsheet, as well as the limit proposed by the Authority, is below the nonindustrial concentration for mercury. It is possible that this will result in users violating the mercury limit while discharging only domestic wastewater. As an alternative, the Authority could try to reduce the mercury levels in the nonindustrial wastewater through implementation of a mercury reduction program. In this type of approach, the Authority could maintain its existing mercury local limit and begin regulating users that had previously not been regulated such as dental offices. Reducing the levels of mercury in the nonindustrial wastewater would allow for a higher local limit for the significant industrial users. I have information available on mercury reduction programs if you are interested in this approach.

Please provide a response to the issues raised above along with a revised local limits evaluation as appropriate. Please ensure that you specifically address the issue of the ammonia and total nitrogen design loads for both treatment plants, including an explanation of whether the loadings used in your submission are the actual design loadings for the treatment plants. If you have any questions regarding this matter, please contact me at 215-814-5790.

Sincerely,

John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division

Enclosures

cc: Maria Bebenek, PADEP Southcentral Region (w/out enclosures)
Ron Furlan, PADEP Central Office (w/out enclosures)

Altoona East & Altoona West Local Limits

George Boliski [GBoliski@altoonawater.com]
Sent: Thursday, May 16, 2013 2:58 PM
To: Jlovell
Attachments: Altoona West Submission Re~1.xls (1 MB) ; Altoona East Submission Re~1.xls (694 KB) ; Local Limits reply 2013 Ea~1.doc (59 KB)

John,

Attached are the spreadsheets with corrections as indicated in the letter of March 11, 2013.

George C. Boliski
Environmental Services Manager
Altoona Water Authority
144 Westerly Treatment Plant Road
Duncansville, PA 16635-7814
814-949-2246 x 2202
gboliski@altoonawater.com

ALTOONA WATER AUTHORITY

May 16, 2013

Mr. John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Local Limits Calculations, Altoona Water Authority's Westerly Wastewater Treatment
NPDES PA0027014 and PA0027022

Dear Mr. Lovell,

In response to your letter dated March 11, 2013, enclosed are the Altoona East and Altoona West submission spreadsheets for the headworks evaluation on version 3.3. The spreadsheet contains the additional analysis data as indicated. Prior to the submission of the previous data, I was teaching my trainee on entering data into the spreadsheets. Data was deleted, and I did not see this until your letter. The plant design data for the parameters was supplied to me by our consulting engineers and is the data used in the spreadsheets. The following indicates what was taken from your spreadsheets and changes I made.

Altoona West

POTW daily flow was changed to 5.75 as 2012 was a very dry year for this area.

TABLE 1 – Nitrification is present, this was deleted as indicated above.

TABLE 3 – Changed removal efficiency of copper, nickel, silver & zinc to default (activated sludge). Changed removal efficiency of nitrogen to influent/effluent. Removed NPDES limit for nitrogen and phosphorous.

TABLE 4 – Added Chronic water quality Stanard for Bis(2-EthylHexyl) Phthalate & changed formula.

TABLE 5 – Added acute water quality standard for Bis(2-EthylHexyl) Phthalate.

TABLE 6 – Added human health water quality standard for Bis(2-EthylHexyl) Phthalate.

TABLE 8 – Added 0% removal efficiency to arsenic and ammonia.

TABLE 10 – Nitrification corrected in TABLE 1.

TABLE 19 – Listed proposed local limits. Will use 0.0002 mg/l for cadmium's local limit which is less than the chronic water quality standard, if this is allowed.

Altoona East

POTW daily flow was changed to 4.1 as 2012 was a very dry year for this area.

TABLE 1 – Nitrification is present, this was deleted as indicated above.

TABLE 3 – Changed removal efficiency of copper to default (activated sludge). Changed removal efficiency of chromium to influent/effluent. Removed NPDES limit for nitrogen.

TABLE 10 – Nitrification corrected in TABLE 1.

TABLE 13 – Did not use maximum influent concentrations.

TABLE 19 - Listed proposed local limits

I believe the data included meets the comments of your March 11 2013 letter. If there are questions please call or e-mail.

Respectfully,

George C. Boliski
Environmental Services Manager

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

MAR 11 2013

Mr. George C. Boliski
Environmental Services Manager
Altoona Water Authority
Wastewater Treatment Operations
144 Westerly Treatment Plant Road
Duncansville, Pennsylvania 16635-7800

Re: Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Boliski:

I have completed the review of the Authority's revised local limits evaluations submitted on November 13, 2012 (Westerly Treatment Plant) and November 15, 2012 (Easterly Treatment Plant). Based on this review, additional revisions will be needed before the evaluations will be acceptable. Enclosed are two printouts (one for each treatment plant) of a spreadsheet used to calculate local limits in which the data inputs are revised as discussed below. These printouts are not intended to be used by the Authority directly, but are only included as an indication of the effect of the changes based on my comments. The comments below are presented in the order that the data is presented in the "Local Limits Calculation" spreadsheet for each facility. As shown at the bottom of the first column in the "POTW Monitoring Data" spreadsheet, green and pink shaded boxes in this spreadsheet highlight any data reported as non-detectable and indicate how those data were handled for purposes of the calculations. Grey shaded boxes highlight any data that was excluded from the data set because it did not appear to be consistent with the rest of the data set for that pollutant. Note that the enclosed printout is based on Version 4.0 of the EPA local limits spreadsheet while the Authority's submission was made using Version 3.3 of the spreadsheet. Although there were a few enhancements made in Version 4.0, these enhancements generally do not impact the calculations made by the Authority using Version 3.3.

Easterly WWTF

POTW Monitoring Data Spreadsheet

I did not make changes to the Authority's handling of the monitoring data for most pollutants. However, for bis (2-ethylhexyl) phthalate almost all of the influent and effluent data was reported as non-detectable using a relatively high detection level. Since there was some data available from past influent and sludge priority pollutant scans that used a lower detection level, I added that data to the evaluation. This included data from calendar years 2006, 2007, and 2008.

Local Limits Calculation Spreadsheet

Table 1 – Unit Operations – The Authority's submission indicates that there is no nitrification at

the Easterly Treatment Plant. Previous submissions by the Authority showed nitrification present at the Easterly Plant, and the influent and effluent data shows an ammonia removal of more than 98%. This suggests that nitrification is present at the Easterly Plant and therefore an "X" is included in the "Nitrification Present?" box in the enclosed spreadsheet. Please provide clarification on whether nitrification occurs at the Easterly Plant, and if present, what treatment units it occurs in.

Table 3 - NPDES Effluent Limits – The Authority entered an NPDES limit to calculate an allowable headworks loading based on protection of water quality for total nitrogen, and calculated a removal rate based on influent and effluent data collected during the first quarter of calendar year 2011. Based on this approach, the allowable headworks loading based on protection of water quality is lower than the design load entered by the Authority in Table 17 of the spreadsheet. The cover letter for the Authority's Easterly Plant submission indicates that construction on the nitrogen removal equipment was only completed in November 2012 and therefore it appears that the removal rate used by the Authority in calculating the water quality based allowable headworks loading is not representative of the future conditions at the treatment plant. Since the Authority has a design load for total nitrogen, the maximum allowable headworks loading for the treatment plant should be based on the design loading rather than the NPDES limit and removal rate. Therefore the enclosed spreadsheet deletes the NPDES limit for nitrogen and relies solely on the design loading in determination of the maximum allowable headworks loading.

Based on the changes to the monitoring data for bis (2-ethylhexyl) phthalate the removal rate used in the enclosed spreadsheet was revised as well.

Table 10 – Nitrification Inhibition – As noted above, it appears that the Easterly Plant includes nitrification. Therefore calculations for the allowable headworks loading based on nitrification inhibition have been included in the enclosed spreadsheet. Note that the enclosed spreadsheet uses the default primary removal rates. This assumes that nitrification occurs in the activated sludge treatment units. If this is not the case, then adjustments may need to be made to the removal rates used in the nitrification inhibition calculations to reflect the removal through the units prior to the nitrification units.

Table 13 - Comparison of Inhibition Loadings - Table 13 of the spreadsheet selects the lowest of the calculated allowable headworks loadings based on inhibition and, if no inhibition has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the "POTW Monitoring Data" worksheet). The spreadsheet then selects the larger of the two as the allowable headworks loading based on inhibition. Where no inhibition has occurred, the treatment plant has demonstrated that it can accept these measured concentrations without inhibition, and therefore it may not be appropriate to select a lower allowable headworks loading based on inhibition for that pollutant. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the "POTW Monitoring Data" worksheet or otherwise not included in the influent data set. Note that this adjustment assumes that no inhibition has occurred at the Authority's treatment plant. If the Authority has experienced inhibition at the treatment plant, the maximum allowable headworks loading should not be adjusted based on the maximum influent concentration. Note also that adjustments that were made by the Authority in the influent data impacted some of the maximum influent concentrations that were automatically transferred to this table. Therefore the maximum

influent concentration for arsenic, chromium, copper, lead, mercury, molybdenum, nickel, zinc, ethylbenzene, toluene, and xylene were manually entered in the enclosed spreadsheet based on maximum values that were eliminated from the influent data sets for these pollutants, although this data only impacted the allowable headworks loading based on inhibition for copper and zinc. If the Authority believes that these results were reported in error rather than simply unusual concentrations that actually occurred they should not be used in the inhibition evaluation.

Table 17 - Comparison of All Allowable Headworks Loadings - Table 17 selects the most stringent of the calculated allowable headworks and design loadings where applicable. This most stringent allowable loading is then used as the maximum allowable headworks loading in order to determine the appropriate local limits. As noted in my letter of July 23, 2012, it appears that the "design loadings" entered by the Authority in its spreadsheet may have been the actual average influent loadings used for the design rather than the loading that the treatment plant was designed to handle. Based on the information that you previously provided I recommend that the Authority use the design maximum monthly loading for the evaluation, and the design loadings in the enclosed spreadsheet have been revised for BOD_5, total suspended solids, and phosphorus. I did not have information available on the design loadings for ammonia and total nitrogen, but the Authority should review these values as well to ensure that the value entered in the spreadsheet is the loading that the treatment plant is designed to handle rather than the actual average influent loadings used for the design. Since total nitrogen is total kjeldahl nitrogen plus nitrate nitrogen and nitrite nitrogen, it seems that the design loading for total nitrogen should be no less than the design loading for total kjeldahl nitrogen. Since the design loading for total nitrogen listed in the Authority's evaluation is less than the design maximum monthly loading for total kjeldahl nitrogen, the enclosed spreadsheet uses the design maximum monthly loading for total kjeldahl nitrogen.

Table 18 - Calculation of Local Limits – In general, EPA recommends a safety factor of between 10% and 25%, with an additional growth factor if significant growth is expected within the service area. The Authority did not use a safety factor for ammonia and it is recommended that a safety factor be added for this pollutant.

The Authority did not include a background loading allocation for ammonia, BOD_5, total suspended solids, phosphorus, nitrogen, PCBs, or bis (2-ethylhexyl) phthalate. While this could be considered an appropriate assumption for PCBs, substantial levels of all of these other pollutants are generally found in domestic sewage and therefore the assumption that the background loadings for these pollutants is zero is not a valid assumption. Since the Authority's submission did not include monitoring data for the collection system background levels for these pollutants, the enclosed spreadsheet uses the average influent concentration as the background concentration for ammonia, BOD_5, total suspended solids, phosphorus, and nitrogen. If the Authority has actual collection system background monitoring data, this data should be used for the evaluation.

For bis (2-ethylhexyl) phthalate the nonindustrial concentration in the enclosed spreadsheet is listed as 0.006 mg/l. The nonindustrial concentration used by the Authority is based on data that was mostly reported as non-detectable using a relatively high detection limit (0.1 mg/l) and appears to contribute to a negative local limit if used in the evaluation. The enclosed spreadsheet uses EPA's default nonindustrial concentration from Appendix V of EPA's *Local Limits Development Guidance*.

In addition, the Authority did not provide data for the hauled waste received at the treatment

plant for ammonia, antimony, phosphorus, total nitrogen, PCBs, and bis (2-ethylhexyl) phthalate. The Authority will need to include this data in its reevaluation since these loadings can be significant, especially for pollutants such as ammonia, phosphorus, and total nitrogen.

Based on the changes to the calculations discussed above, limits calculated in Table 18 of the enclosed spreadsheet for copper and phosphorus appear to be problematic. For phosphorus a negative limit is calculated and for copper a limit below the background concentration is calculated. Both issues may be related to the background concentrations used in the evaluation. The background concentration used in the enclosed spreadsheet for phosphorus is based on the average influent concentration. However, a review of the influent data shows that the listed concentrations for the influent in March 2011 generally ranged from 1 mg/l to 3 mg/l, while the listed concentrations for January and February 2011 ranged from 15 mg/l to 30 mg/l. It appears unlikely that there would be that large a variation in the influent concentrations, and therefore the influent data used in the enclosed spreadsheet to develop the background concentration is suspect. Since it appears that the influent data cannot be used for determination of the background loading, the Authority will need to collect background data for phosphorus in order to determine the background loading.

For copper, the currently approved local limits evaluation established a local limit for copper of 0.62 mg/l (using a 5% safety factor). The enclosed spreadsheet calculates a local limit for copper of 0.05 mg/l (also using a 5% safety factor). A comparison of these two limits development submissions indicates that the main difference is in the background concentration of copper used in each evaluation. The currently approved evaluation used a background concentration for copper of 0.0126 mg/l while the enclosed spreadsheet uses a background copper concentration of 0.0568 mg/l based on data submitted by the Authority. The revised background value results in a background loading that is almost five times higher in the enclosed spreadsheet and a significantly lower calculated limit for copper. While a tightening of the local limit may be appropriate since the Authority has violated its NPDES limit for copper at times, it may not be appropriate to establish a local limit that is below the background levels. The Authority should review the collection of the current data to ensure that an appropriate sampling location was used that is representative of the unregulated users in the system. If the sampling location is appropriate, the Authority should collect additional data to verify the background loadings as well as considering other appropriate locations for comparison purposes.

Table 19 - Comparison of Limits - This table compares the existing and calculated local limits to highlight which limits would be made more stringent (green bold) and which less stringent (brown bold) based on the calculations. In addition, this table includes a column to show the limits proposed in the Authority's submission and would highlight (in red bold) any proposed limits that are less stringent than the limits calculated in the spreadsheet. However, the Authority did not propose specific limits with its submission and so no proposed limits are included in this table. The Authority's revised submission must include the limits that it proposes based on the reevaluation.

The table also highlights other issues (in the "Other Issues" column), and notes "Need Limit?" where no limit was proposed but where the current average percent loading (shown in Table 20) is greater than 60% of the maximum allowable headworks loading (80% used for BOD_5, total suspended solids, ammonia, phosphorus, and total nitrogen), the current maximum percent loading is greater than 80% of the maximum allowable headworks loading (100% used for BOD_5, total suspended solids, ammonia, phosphorus, and total nitrogen), or there is an existing limit. EPA's

local limits guidance manual suggests that for most pollutants, where no current limit exists and the average influent loading is greater than 60% of the maximum allowable headworks loading or the maximum influent loading is greater than 80% of the maximum allowable headworks loading, a new local limit should be adopted. Based on this evaluation, the table suggests that, in addition to the pollutants for which limits currently exist, a limit is necessary for total suspended solids based on the maximum influent loading and for ammonia, BOD_5, phosphorus, total nitrogen, and bis (2-ethylhexyl) phthalate based on both the average and maximum influent loadings.

Westerly WWTF

POTW Monitoring Data Spreadsheet

I did not make changes to the Authority's handling of the monitoring data for most pollutants. However, for several pollutants all of the hauled waste data was reported as non-detectable and the detection limit was used in the Authority's evaluation. For these pollutants (arsenic, cadmium, chromium, cyanide, nickel, and silver) the values used to calculate the average hauled waste levels were revised to half the detection level. In general when all of the monitoring results for a pollutant at a given sampling point are below detection it suggests that the actual result is well below detection so I recommend use of half the detection limit.

Local Limits Calculation Spreadsheet

Table 1 – Unit Operations – The Authority's submission indicates that there is no nitrification at the Westerly Treatment Plant. Previous submissions by the Authority showed nitrification present at the Westerly Plant, and therefore an "X" is included in the "Nitrification Present?" box in the enclosed spreadsheet. Please provide clarification on whether nitrification occurs at the Westerly Plant, and if present, what treatment units it occurs in.

Table 3 - NPDES Effluent Limits – The Authority entered an NPDES limit to calculate an allowable headworks loading based on protection of water quality for phosphorus and total nitrogen, and calculated a removal rate based on influent and effluent data collected during the first quarter of calendar year 2011. Based on this approach, the allowable headworks loading based on protection of water quality is lower than the design load entered by the Authority in Table 17 of the spreadsheet. However, the cover letter for the Authority's Westerly Plant submission indicates that construction on the nitrogen removal equipment was only completed in April 2012 and therefore it appears that the removal rate used by the Authority in calculating the water quality based allowable headworks loading, at least for nitrogen removal, is not representative of the future conditions at the treatment plant. Since the Authority has a design load for both phosphorus and total nitrogen, the maximum allowable headworks loading for the treatment plant should be based on the design loading rather than the NPDES limit and removal rate unless the Authority believes that the treatment plant cannot operate at the design levels. Therefore the enclosed spreadsheet deletes the NPDES limit for these two pollutants and relies solely on the design loading in determination of the maximum allowable headworks loading.

Table 4 – Chronic Water Quality Standards – The Authority's submission did not use the chronic water quality standard for bis (2-ethylhexyl) phthalate. This value was added in the enclosed spreadsheet and must be added to the Authority's evaluation. Note that it appears that the formula for calculating the allowable headworks loading for bis (2-ethylhexyl) phthalate has

been changed in the Authority's spreadsheet so that it uses the PCBs water quality standard rather than the bis (2-ethylhexyl) phthalate standard. The Authority should correct the formula in its spreadsheet so that the calculation is done correctly. If you need help doing this, please let me know.

Table 5 – Acute Water Quality Standards – The Authority's submission did not use the acute water quality standard for bis (2-ethylhexyl) phthalate. This value was added in the enclosed spreadsheet and must be added to the Authority's evaluation.

Table 6 – Human Health Water Quality Standards – The Authority's submission did not use the Human Health water quality standard for bis (2-ethylhexyl) phthalate. This value was added in the enclosed spreadsheet and must be added to the Authority's evaluation.

Table 7 – Activated Sludge Inhibition – The Authority's spreadsheet did not calculate an allowable headworks loading based on activated sludge inhibition for arsenic and ammonia. This is because no removal rate was entered in the removal rate column for these pollutants. The enclosed spreadsheet uses a removal rate of 0% (the most conservative assumption). Although the enclosed spreadsheet suggests that inhibition is not the determining factor for either of these pollutants, the Authority should revise its spreadsheet to conduct the activated sludge calculation for these pollutants by adding a removal rate.

Table 10 – Nitrification Inhibition – As discussed above, it appears that the Westerly Plant includes nitrification. Therefore calculations for the allowable headworks loading based on nitrification inhibition have been included in the enclosed spreadsheet. Note that the enclosed spreadsheet uses the default primary removal rates. This assumes that nitrification occurs in the activated sludge treatment units. If this is not the case, then adjustments may need to be made to the removal rates used in the nitrification inhibition calculations to reflect the removal through the units prior to the nitrification units.

Table 13 - Comparison of Inhibition Loadings - Table 13 of the spreadsheet selects the lowest of the calculated allowable headworks loadings based on inhibition and, if no inhibition has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the "POTW Monitoring Data" worksheet) and selects the larger of the two as the allowable headworks loading based on inhibition. Where no inhibition has occurred, the treatment plant has demonstrated that it can accept these measured concentrations without inhibition, and therefore it may not be appropriate to select a lower allowable headworks loading based on inhibition for that pollutant. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the "POTW Monitoring Data" worksheet or otherwise not included in the influent data set. Note that this adjustment assumes that no inhibition has occurred at the Authority's treatment plant. If the Authority has experienced inhibition at the treatment plant, the maximum allowable headworks loading should not be adjusted based on the maximum influent concentration. Note also that adjustments that were made by the Authority in the influent data impacted some of the maximum influent concentrations that were automatically transferred to this table. Therefore the maximum influent concentration for copper, lead, mercury, molybdenum, nickel, silver, zinc, and PCBs were manually entered in the enclosed spreadsheet based on maximum values that were eliminated from the influent data sets for these

pollutants, although this data only impacted the allowable headworks loading based on inhibition for copper and zinc. If the Authority believes that these results were reported in error rather than simply unusual concentrations that actually occurred they should not be used in the inhibition evaluation.

Table 17 - Comparison of All Allowable Headworks Loadings - Table 17 selects the most stringent of the calculated allowable headworks and design loadings where applicable. This most stringent allowable loading is then used as the maximum allowable headworks loading in order to determine the appropriate local limits. As noted in my letter of July 23, 2012, it appears that the "design loadings" entered by the Authority in its spreadsheet may have been the actual average influent loadings used for the design rather than the loading that the treatment plant was designed to handle. Based on the information that you previously provided I recommend that the Authority use the design maximum monthly loading for the evaluation, and the design loadings in the enclosed spreadsheet have been revised for BOD_5, total suspended solids, and phosphorus. I did not have information available on the design loadings for ammonia and total nitrogen, but the Authority should review these values as well to ensure that the value entered in the spreadsheet is the loading that the treatment plant is designed to handle rather than the actual average influent loading used for the design. Since total nitrogen is total kjeldahl nitrogen plus nitrate nitrogen and nitrite nitrogen, it seems that the design loading for total nitrogen should be no less than the design loading for total kjeldahl nitrogen. Since the design loading for total nitrogen listed in the Authority's evaluation is less than the design maximum monthly loading for total kjeldahl nitrogen, the enclosed spreadsheet uses the design maximum monthly loading for total kjeldahl nitrogen.

Table 18 - Calculation of Local Limits – In general, EPA recommends a safety factor of between 10% and 25%, with an additional growth factor if significant growth is expected within the service area. The Authority did not use a safety factor for ammonia and it is recommended that a safety factor be added for this pollutant. The enclosed spreadsheet uses a safety factor of 10% for ammonia, which is the safety factor used by the Authority for phosphorus and total nitrogen.

The Authority did not include a background loading allocation for cadmium, ammonia, total suspended solids, nitrogen, PCBs, or bis (2-ethylhexyl) phthalate. For cadmium the Authority's submission did not include monitoring data for the collection system background levels, and therefore the enclosed spreadsheet uses the average influent concentration as the background concentration. For ammonia the Authority's submission did not include monitoring data for the collection system background levels or influent monitoring data. The Authority must provide data to estimate the background loadings for ammonia. For nitrogen, PCBs, and bis (2-ethylhexyl) phthalate it appears that the Authority's spreadsheet is taking the nonindustrial concentration value from the wrong cell on the monitoring data worksheet and the Authority will need to correct the formula for the nonindustrial concentration cell for these pollutants. Again, if you need help doing this, please let me know. For BOD_5 the Authority's spreadsheet uses a background concentration of 27.75 mg/l. This appears to be an unreasonably low value for the background levels and therefore the enclosed spreadsheet uses the average influent concentration as the background concentration for this pollutant as well. If the Authority has actual collection system background monitoring data, this data should be used for the evaluation in place of the average influent values that were used in the enclosed spreadsheet.

For bis (2-ethylhexyl) phthalate the nonindustrial concentration in the enclosed spreadsheet is listed as 0.006 mg/l. The nonindustrial concentration used by the Authority is based on data that

was mostly reported as non-detectable using a relatively high detection limit (0.1 mg/l) and appears to contribute to a negative local limit if used in the evaluation. The enclosed spreadsheet uses EPA's default nonindustrial concentration from Appendix V of EPA's *Local Limits Development Guidance*.

In addition, the Authority did not provide data for the hauled waste received at the treatment plant for mercury, ammonia, antimony, benzene, ethylbenzene, toluene, xylene, phosphorus, total nitrogen, PCBs, and bis (2-ethylhexyl) phthalate. The Authority will need to include this data in its reevaluation since these loadings can be significant, especially for pollutants such as ammonia, phosphorus, and total nitrogen. For antimony, benzene, ethylbenzene, toluene, and xylene the evaluation is suggesting that local limits may not be necessary, so if the Authority is not proposing local limits for these pollutants the hauled waste data may not be necessary for these pollutants.

Based on the changes described above, the local limits calculated in the enclosed spreadsheet for cadmium and PCBs are negative. Since it is impossible for a user to comply with a negative local limit, implementation of these two limits would be problematic. For cadmium, the problem appears to be related to the background loadings. In the enclosed spreadsheet, the background loading was estimated from the influent monitoring data since no background monitoring data was available. However, the influent monitoring data is all reported as non-detectable using a detection level that is relatively high. Unless background monitoring data is available for cadmium using a more sensitive analytical method, the Authority will need to collect additional background data for cadmium using an analytical method that is more sensitive than the method used to collect the influent data. For PCBs, because of the very stringent water quality standards, POTWs often calculate negative local limits. In these situations, POTWs have generally adopted a limit of no detectable amount using EPA method 608 (most sensitive method listed in 40 CFR 136).

Table 19 - Comparison of Limits - This table compares the existing and calculated local limits to highlight which limits would be made more stringent (green bold) and which less stringent (brown bold) based on the calculations. In addition, this table includes a column to show the limits proposed in the Authority's submission and would highlight (in red bold) any proposed limits that are less stringent than the limits calculated in the spreadsheet. However, the Authority did not propose specific limits with its submission and so no proposed limits are included in this table. The Authority's revised submission must include the limits that it proposes based on the reevaluation.

The table also highlights other issues (in the "Other Issues" column), and notes "Need Limit?" where no limit was proposed but where the current average percent loading (shown in Table 20) is greater than 60% of the maximum allowable headworks loading (80% used for BOD_5, total suspended solids, ammonia, phosphorus, and total nitrogen), the current maximum percent loading is greater than 80% of the maximum allowable headworks loading (100% used for BOD_5, total suspended solids, ammonia, phosphorus, and total nitrogen), or there is an existing limit. EPA's local limits guidance manual suggests that for most pollutants, where no current limit exists and the average influent loading is greater than 60% of the maximum allowable headworks loading or the maximum influent loading is greater than 80% of the maximum allowable headworks loading, a new local limit should be adopted. Based on this evaluation, the table suggests that, in addition to the pollutants for which limits currently exist, a limit is necessary for BOD_5 and total nitrogen based on the maximum influent loading and for ammonia and bis (2-ethylhexyl) phthalate based on both the average and maximum influent loadings. Note that the evaluation automatically highlighted ammonia as needing a limit because no influent data was provided to compare the actual influent

loading to the calculated maximum allowable headworks loading.

Please provide a response to the issues raised above including a revised limits evaluation. If you have any questions regarding this matter, please contact me at 215-814-5790.

Sincerely,

John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division

Enclosures

cc: Maria Bebenek, PADEP Southcentral Region (w/out enclosures)
Ron Furlan, PADEP Central Office (w/out enclosures)

Altoona East Local Limits Submission
George Boliski
to:
John Lovell
11/15/2012 06:30 AM
Hide Details
From: George Boliski <GBoliski@altoonawater.com>

To: John Lovell/R3/USEPA/US@EPA

History: This message has been replied to.

2 Attachments

Local Limits reply 2012 Easterly 11-15-2012.doc Altoona East Submission Redone - EPA v 3.3.xls

John,

Attached are the spreadsheet and cover letter for the Easterly Wastewater Treatment Facility.

George C. Boliski
Environmental Services Manager
Altoona Water Authority
144 Westerly Treatment Plant Road
Duncansville, PA 16635-7814
814-949-2246 x 2202
gboliski@altoonawater.com

ALTOONA WATER AUTHORITY

November 15, 2012

Mr. John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Local Limits Calculations, Altoona Water Authority's Easterly Wastewater Treatment
NPDES PA0027014

Dear Mr. Lovell,

On behalf of the Altoona Water Authority enclosed is the Altoona East submission spreadsheet for the headworks evaluation for the Westerly Wastewater Treatment Facility on version 3.3. The spreadsheet contains additional data for hauled waste. The following indicates what was taken from your spreadsheets and changes I made.

Monitoring Data Altoona West

1. Arsenic, Cadmium, Chromium, Copper, Cyanide, Lead, Molybdenum, Nickel, Selenium, Silver and Zinc were changed to meet your criteria with added hauler data.
2. Mercury - changed to meet your criteria with added hauler data listed as non-detect half of detection limit.
3. Ammonia Nitrogen – no changes
4. BOD - changed to meet your criteria with added hauler data.
5. TSS - changed to meet your criteria with added hauler data.
6. Beryllium – no changes
7. Antimony - changed to meet your criteria.
8. Benzene, Ethylbenzene, Toluene and Xylene changed to meet your criteria.
9. Phosphorus and Nitrogen - changed to meet your criteria.
10. PCBs - corrected influent of 12/8/2010 to 0.000005 and influent of 6/25/2010 to 0.00005. Deleted the non-industrial data as inconsistent.
11. Bis – Deleted the non-industrial data as inconsistent.

Limits Calculations

Table 1 - Removed the X from nitrification present box.

Table 2b – Changed hauled waste to 25,000 gpd average discharge for for both plants.

Table 3 – Changed PCB Removal Efficiency to Influent/Effluent. Changed Bis Removal Efficiency to Influent/Effluent.

Throughout the remaining tables changed data to meet yours. Data for eliminating the nitrification calculation also changed data. The calculations indicate positive limits for all parameters indicated on Tables 18 & 21.

The Easterly Facility Phase 1 construction was completed on November 9, 2012. The facility is currently being changed to run as a BNR facility with this work being completed before November 22nd..

I believe the data included meets the comments of your July 23, 2012 letter. If there are questions please call or e-mail.

Respectfully,

George C. Boliski
Environmental Services Manager

Altoona West Local Limits Submission
George Boliski
to:
John Lovell
11/13/2012 11:40 AM
Hide Details
From: George Boliski <GBoliski@altoonawater.com>

To: John Lovell/R3/USEPA/US@EPA

3 Attachments

Local Limits reply 2012 Westerly 11-13-2012.doc Septic Hauler and Other Analysis.xlsx

Altoona West Submission Redone - EPA v 3.3.xls

John,

Attached are the spreadsheet, cover letter and additional data for the Westerly Wastewater Treatment Facility. I will submit the spreadsheet for the Altoona East submission by Thursday, November 15th.

George C. Boliski
Environmental Services Manager
Altoona Water Authority
144 Westerly Treatment Plant Road
Duncansville, PA 16635-7814
814-949-2246 x 2202
gboliski@altoonawater.com

ALTOONA WATER AUTHORITY

November 13, 2012

Mr. John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Local Limits Calculations, Altoona Water Authority's Westerly Wastewater Treatment
NPDES PA0027022

Dear Mr. Lovell,

On behalf of the Altoona Water Authority enclosed is the Altoona West submission spreadsheet for the headworks evaluation for the Westerly Wastewater Treatment Facility on version 3.3. The spreadsheet contains additional data for hauled waste and PCBs. The following indicates what was taken from your spreadsheets and changes I made.

Monitoring Data Altoona West

1. Arsenic, Cadmium, Chromium, Copper, Cyanide, Lead, Molybdenum, Nickel and Silver were changed to meet your criteria with added hauler data.
2. Mercury - changed to meet your criteria with added hauler data listed as non-detect half of detection limit.
3. Selenium - changed to meet your criteria with added hauler data. Deleted 0.021 and 0.024 in effluent data as inconsistent.
4. Zinc - changed to meet your criteria with added hauler data. Deleted 855.6 from sludge data as inconsistent.
5. Ammonia Nitrogen – no changes
6. BOD - changed to meet your criteria with added hauler data.
7. TSS - changed to meet your criteria with added hauler data.
8. Beryllium – no changes
9. Antimony - changed to meet your criteria.
10. Benzene, Ethylbenzene, Toluene and Xylene changed to meet your criteria.
11. Phosphorus and Nitrogen - changed to meet your criteria.
12. PCBs - changed to meet your criteria and corrected effluent of 2/11/2011 to 0.000005 half detection limit and deleted effluent of 5/25/2011 as inconsistent. 12/01/2011 effluent was corrected to 0.000005, half of detection limit. The data indicated as 7/28/10, 7/21/10 and 8/11/10 is actually current data for 2/15/12, 5/24/12, and 8/22/12 changed to half detection level with 2/15/12 deleted as inconsistent.
13. Bis – no changes.

Limits Calculations

Table 1 Removed the X from nitrification present box.

Table 2b Added 25,000 gpd average discharge for hauled waste for both plants.

Throughout the remaining tables changed data to meet yours. Data for eliminating the nitrification calculation also changed data. The calculations indicate positive limits for all parameters indicated on Tables 18 & 21.

The Westerly Facility Phase 2 construction was completed in April 2012 and the facility is meeting BNR requirements.

I believe the data included meets the comments of your July 23, 2012 letter. If there are questions please call or e-mail.

Respectfully,

George C. Boliski
Environmental Services Manager

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. George C. Boliski
Environmental Services Manager
Altoona Water Authority
Wastewater Treatment Operations
144 Westerly Treatment Plant Road
Duncansville, Pennsylvania 16635-7800

JUL 2 3 2012

Re: Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Boliski:

I have completed the review of the Authority's revised local limits evaluations submitted by email on May 23, 2012 (Westerly Treatment Plant) and June 29, 2012 (Easterly Treatment Plant). Based on this review, additional revisions will be needed before the evaluations will be acceptable. Enclosed are two printouts (one for each treatment plant) of a spreadsheet used to calculate local limits in which the data inputs are revised as discussed below. These printouts are not intended to be used by the Authority directly, but are only included as an indication of the effect of the changes based on my comments. The comments below are presented in the order that the data is presented in the "Local Limits Calculation" spreadsheet for each facility. As shown at the bottom of the first column in the "POTW Monitoring Data" spreadsheet, green and pink shaded boxes in this spreadsheet highlight any data reported as non-detectable and indicate how those data were handled for purposes of the calculations. Grey shaded boxes highlight any data that was excluded from the data set because it did not appear to be consistent with the rest of the data set for that pollutant. Note that the enclosed printout is based on Version 4.0 of the EPA local limits spreadsheet while the Authority's submission was made using Version 3.3 of the spreadsheet. Although there were a few enhancements made in Version 4.0, these enhancements generally do not impact the calculations made by the Authority using Version 3.3.

Easterly WWTF

POTW Monitoring Data Spreadsheet

The data in the enclosed "POTW Monitoring Data" spreadsheet is essentially the same as the data included in the Data Summary tables in the Authority's submission. However, the Authority's handling of non-detectable results was reevaluated and revised in some instances. Note that the Authority's submission used a "<" sign to indicate non-detectable values in the sampling data. Entering the "<" sign (or any other non-numerical character) in the cell with the sample data causes the spreadsheet to read the data in that cell as a non-numerical value and ignore that value for purposes of any calculations. Since eliminating the non-detectable values generally eliminates the lower values it can have a fairly significant impact on the calculations that are based on that data. Therefore in using the spreadsheet the Authority should avoid using any non-numerical character unless the intent is to eliminate that data point from the evaluation. This is typically only done when

a data point is considered to be not representative of the data set in general. To enter and use non-detectable values, the data should be entered without the "<" sign but the cell color coded as discussed below to indicate that the result was reported as non-detectable.

In general, where most or all of the results for a pollutant at a given sample point are reported as non-detectable, I recommend use of half the detection limit as a surrogate for use in the calculations. This assumes that where most or all of the results are reported as non-detectable, the actual result is likely to be well below the detection limit. Where only a few of the results for a pollutant at a given sample point are reported as non-detectable, I recommend use of the detection limit as a surrogate. This assumes that where only a few of the results are reported as non-detectable the actual result is likely to be near the detection limit. The recommended handling of the non-detectable values is shown in the attached spreadsheet using pink shading to indicate use of half the detection limit in place of non-detectable values and using green shading to indicate use of the detection limit in place of non-detectable values.

In addition, there were a number of sample results that I eliminated from the data set. Version 4.0 (as does Version 3.3) of the local limits spreadsheet determines the standard deviation of the data set and highlights any value that is different than the average by more than two times the standard deviation. As suggested in the EPA local limits guidance, these values are considered to be outliers (not representative of the data set) and were eliminated from the data set (grey shaded cell with an "X" after the result). Since the Authority included additional monitoring data since its last submission of the evaluation, data points that were eliminated based on my previous comments were included in the evaluation of the data set and only eliminated if this new evaluation showed them as outliers. Note that after elimination of any data points based on this evaluation, the spreadsheet recalculates the standard deviation and reassesses the data set but these secondary outliers were not eliminated from the data sets. I also eliminated sample results where the detection limit for non-detectable values was above the average for the pollutant and sample point (grey shaded cell with "<" before the result). This assumes that a non-detectable result should not be greater than a majority of the detectable results.

Although the same approach was taken with the Authority's non-industrial monitoring data, it appears that the results reported for some of the pollutants are highly variable. For example, the lead data ranges from <0.005 mg/l to 0.597 mg/l. Since there is relatively little data available for each pollutant, it is more difficult to determine an appropriate value to use in the evaluation. I would recommend that the Authority review the procedures and locations used in collecting the non-industrial data to ensure that the data are representative of discharges from unregulated users (e.g., residential, commercial). As a long term measure, it may be appropriate for the Authority to start collecting non-industrial data periodically (such as once per quarter) to ensure that more data are available for the next reevaluation.

Local Limits Calculation Spreadsheet

Table 3 - NPDES Effluent Limits – The Authority's submission uses an NPDES permit limit of 0.06 mg/l for total nitrogen. Based on a review of the Authority's NPDES permit it is unclear where this limit came from. If the Authority believes that this value is correct, please provide an explanation of the source of this value. The enclosed spreadsheet uses an NPDES limit of 8.3 for total nitrogen. This is based on the Authority's annual loading limit converted to a daily concentration limit using the current flow from the local limits reevaluation. This approach determines a local limit to protect

against violations of the NPDES limit at the current conditions and would not be appropriate if the Authority anticipates a significant increase in the treatment plant flow within the next few years. There are other approaches that the Authority could use such as use of a daily concentration limit based on the treatment plant design flow. In any event, the Authority should provide an explanation of its choice of value to use as the NPDES limit for total nitrogen.

The enclosed spreadsheet eliminates the NPDES limits that the Authority entered for BOD_5, total suspended solids, and phosphorus. EPA guidance suggests that the maximum allowable headworks loading for these pollutants should be based on the treatment plant design loading and therefore no calculations based on the NPDES limits need be done. Design loadings are added in Table 17 of the spreadsheet.

Based on the changes that I made to the handling of the influent, effluent, and sludge monitoring data (see comments under "POTW Monitoring Data Spreadsheet"), the removal rates used in the local limits calculations were revised. The selection of removal rate for each pollutant is shown in the "Select Removal Efficiency" column in Table 3 of the enclosed spreadsheet. In general, where actual influent and effluent data were available, a removal based on the average influent and the average effluent was selected. The enclosed spreadsheet uses the influent/effluent removal for copper, mercury, nickel, selenium, zinc, ammonia, and total nitrogen. Where the influent/effluent removal could not be used, a removal based on the average influent load and average sludge load was used. The enclosed spreadsheet uses the influent/sludge removal for arsenic, cadmium, chromium, molybdenum, silver, antimony, and PCBs. Note that for molybdenum there is influent and effluent data available that could be used for calculation of a removal rate. However, use of the influent/effluent removal results in a negative local limit based on protection of sludge quality. Since the Authority's sludge monitoring data for molybdenum indicates that its sludge quality is currently well below the sludge standard, this suggests that the influent/effluent removal is not appropriate and therefore the influent/sludge removal was used. Where the influent, effluent, and sludge data could not be used to determine a removal rate, EPA's default removal for activated sludge treatment plants was used. The enclosed spreadsheet uses the default removal for cyanide, benzene, ethylbenzene, toluene, and bis (2-ethylhexyl) phthalate. Note that the default removals for benzene, ethylbenzene, toluene, and bis (2-ethylhexyl) phthalate are entered as user entered values since they are not previously built into the spreadsheet.

For lead, a different approach was taken to determine a removal rate. Use of the influent/sludge removal results in a negative local limit while use of the influent/effluent or default removal results in a maximum allowable headworks loading that is exceeded by the current influent levels about 40% of the time based on the data included with the evaluation. Since there have been no exceedances of the effluent or sludge disposal standards based on the data included in the evaluation, this suggests that the maximum allowable headworks loading calculated using these removals is too low. Therefore, I determined the removal rate that would result in the highest possible maximum allowable headworks loading for lead for the Easterly Plant and included this value as a user entered removal rate. Note that even using this removal, the calculated local limit is more stringent than the existing local limit and 33% of the influent values exceed the maximum allowable headworks loading while none of the effluent or sludge values exceed the effluent or sludge standards. This could be an indication that some of the monitoring results are suspect, and the Authority should review the data reported in the evaluation as well as its sampling procedures to determine if changes are necessary.

For xylene the influent, effluent, and sludge data could not be used to determine a removal rate and there is no EPA default removal available. Therefore a removal of 0% was entered since use of this value results in the lowest possible maximum allowable headworks loading. Even with this conservative approach the evaluation indicates that the current influent loading never exceeds 4% of the maximum allowable headworks loading (see Table 20 of the enclosed spreadsheet) and therefore a local limit for this pollutant does not appear to be needed.

Table 4 - Chronic Water Quality Standards – Table 4 of the Authority's submission includes receiving stream background concentrations. It is unclear if the values shown in the Authority's submission are actual values or represent the detection level for non-detectable sample results. However, unless clean sampling techniques and low level metals analytical methods are used, use of detection levels to estimate receiving stream background loadings will often over estimate the actual loading. While this is acceptable since it provides an additional safety factor for the water quality calculations, it could result in local limits that are lower than necessary. At times PADEP uses zero for the background loading where non-detectable results are obtained and low level analytical methods were not used to obtain the data, and this approach would be acceptable for the Authority's submission as well. Note that the receiving stream background levels only impact allowable headworks loadings that are based on water quality standards (Table 4 through 6 calculations) and do not impact allowable headworks loadings that are based on NPDES permit limits (Table 3 calculations).

Two pollutants where the receiving stream background levels have a significant impact (negative allowable pollutant discharge) are PCBs and bis (2-ethylhexyl) phthalate. As noted above, it is unclear whether these values were reported as non-detectable, but they are similar to some non-detectable values that were entered in the "POTW Monitoring Data" spreadsheet. If these values represent non-detectable sample results, it is recommended that they be deleted and the background level be assumed as zero for these two pollutants. Actual background levels for both pollutants would likely be closer to zero than the detection level used in the calculations. The enclosed spreadsheet deletes these two values and therefore uses zero as the background concentration.

Table 13 - Comparison of Inhibition Loadings - Table 13 of Version 4.0 of the EPA local limits spreadsheet includes an area for the user to indicate whether or not inhibition has occurred in the treatment plant during the time frame in which the influent data was collected. This table of the spreadsheet also selects the lowest of the calculated allowable headworks loadings based on inhibition and, if no inhibition has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the "POTW Monitoring Data" worksheet) and selects the larger of the two as the allowable headworks loading based on inhibition. Where no inhibition has occurred, the treatment plant has demonstrated that it can accept these measured concentrations without inhibition, and therefore it may not be appropriate to select a lower allowable headworks loading based on inhibition for that pollutant. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the "POTW Monitoring Data" worksheet or otherwise not included in the influent data set. Note that this adjustment assumes that no inhibition has occurred at the Authority's treatment plant. If the Authority has experienced inhibition at the treatment plant, the maximum allowable headworks loading should not be adjusted based on the maximum influent concentration, and the spreadsheet will not make this comparison if the "Yes" cell is checked to indicate that inhibition has occurred.

Note also that changes that were made in the data handling (see comments under "POTW Monitoring Data Spreadsheet") impacted some of the maximum influent concentrations that were automatically transferred to this table. Therefore the maximum influent concentration for arsenic, chromium, copper, lead, mercury, molybdenum, nickel, zinc, ethylbenzene, toluene, and xylene was manually entered in the enclosed spreadsheet based on maximum values that were eliminated from the influent data sets for these pollutants, although this data only impacted the final maximum allowable headworks loading for chromium. If the Authority believes that these results were reported in error rather than simply unusual concentrations that actually occurred they should not be used in the evaluation.

Table 17 - Comparison of All Allowable Headworks Loadings - Table 17 selects the most stringent of the calculated allowable headworks and design loadings where applicable. This most stringent allowable loading is then used as the maximum allowable headworks loading in order to determine the appropriate local limits. As noted in my email of July 10, it appears that the design loadings entered by the Authority in its spreadsheet may have been the actual average influent loadings used for the design rather than the design loading. Based on the information that you provided I recommend that the Authority use the design maximum monthly loading for the evaluation, and design loadings in the enclosed spreadsheet have been revised for BOD_5, total suspended solids, and phosphorus. Based on your email of July 11, the Authority's engineers did not determine a design loading for ammonia or total nitrogen and therefore the design loadings for these two pollutants have been deleted in the enclosed spreadsheet. If no design loading is available, the maximum allowable headworks loading for these two pollutants should be determined based on the allowable headworks loading calculations using the NPDES permit limits.

Table 18 - Calculation of Local Limits – In general, EPA recommends a safety factor of between 10% and 25%, with an additional growth factor if significant growth is expected within the service area. The Authority used a safety factor of 5% for the metals in its evaluation. Although this is acceptable, EPA generally recommends that a higher safety factor and growth factor be used to account for variability in the data, to ensure that user violations do not cause problems and that there is available capacity for new users to enter the system. The enclosed spreadsheet uses a safety factor of 10% for all metals except copper. Since the calculated limit for copper is fairly stringent, a 5% safety factor was selected in the enclosed spreadsheet. Note that since the Authority has an NPDES limit for copper and has experienced violations of that limit it may not want to use a reduced safety factor for this pollutant. No growth factor is included, but if the Authority anticipates growth within the service area of the Easterly Plant then an appropriate growth factor should included as well.

As noted above, adjustments were made to the data handling on the non-industrial monitoring results in the "POTW Monitoring Data" worksheet. The effects of these adjustments are reflected in the nonindustrial concentration column in Table 18 and therefore impact the nonindustrial loadings listed in this table and subtracted from the maximum allowable headworks loading prior to calculation of the local limit for each pollutant. Note that for mercury and total nitrogen, the nonindustrial concentration shown in the enclosed spreadsheet is based on the average influent concentration. The data in the "POTW Monitoring Data" spreadsheet indicates that the nonindustrial concentration for mercury is about twice the influent concentration and for total nitrogen is almost three times the influent concentration, and this higher nonindustrial concentration resulted in a negative local limit. Since the nonindustrial flow is over 93% of the actual flow, it seems unlikely that the nonindustrial concentration would be significantly higher than the influent

concentration. Since more influent data is available than nonindustrial data, the influent data may be more representative of the actual nonindustrial concentrations. For bis (2-ethylhexyl) phthalate the nonindustrial concentration in the enclosed spreadsheet is listed as 0.006 mg/l. The nonindustrial concentration used by the Authority is based on data that was mostly reported as non-detectable using a relatively high detection limit (0.1 mg/l) and appears to contribute to the negative local limit that was calculated by the Authority. The enclosed spreadsheet uses EPA's default nonindustrial concentration from Appendix V of EPA's *Local Limits Development Guidance*.

In addition, the Authority did not provide data for the hauled waste received at the treatment plant for cyanide, mercury, molybdenum, selenium, ammonia, antimony, phosphorus, total nitrogen, PCBs, and bis (2-ethylhexyl) phthalate. To try to account for the loading of these pollutants from the hauled waste accepted by the Authority, septage hauler monitoring data from EPA's *Supplemental Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program* was added to the "POTW Monitoring Data" spreadsheet for cyanide and mercury. No data was available in the supplemental manual for the other eight pollutants. For that reason, no hauled waste loading is included in the enclosed spreadsheet for those pollutants. The Authority will need to include this data in its reevaluation since these loadings can be significant, especially for pollutants such as ammonia, phosphorus, and total nitrogen.

The Authority's submission included calculated limits that were negative for 12 pollutants. Since it is impossible for a user to comply with a negative limit, it is not appropriate for the Authority to establish a negative limit. However, based on the changes recommended above the only pollutants for which the calculated limit would remain negative would be total nitrogen and PCBs. For total nitrogen, my understanding is that the upgrade for nitrogen removal is not completed at the Easterly Plant and therefore the removals for total nitrogen used in the evaluation do not reflect the new treatment plant design. Therefore the Authority need not establish a limit for total nitrogen at this point, but should be prepared to address this pollutant in the next local limits evaluation, including collection of appropriate monitoring data. For PCBs, the low water quality standard often results in calculated limits that are negative. My recommendation to address this issue would be for the Authority to adopt a no discharge limit with compliance with the no discharge limit shown through a non-detectable result using EPA method 608 (the most sensitive PCBs method currently listed in 40 CFR 136).

Table 19 - Comparison of Limits - This table compares the existing and calculated local limits to highlight which limits would be made more stringent (green bold) and which less stringent (brown bold) based on the calculations. In addition, this table includes a column to show the limits proposed in the Authority's submission and would highlight (in red bold) any proposed limits that are less stringent than the limits calculated in the spreadsheet. However, the Authority did not propose specific limits with its submission and so no proposed limits are included in this table. The Authority's revised submission must include the limits that it proposes based on the reevaluation.

The table also highlights other issues (in the "Other Issues" column), and notes "Need Limit?" where no limit was proposed but where the current average percent loading (shown in Table 20) is greater than 60% of the maximum allowable headworks loading (80% used for BOD_5, total suspended solids, ammonia, phosphorus, and total nitrogen), the current maximum percent loading is greater than 80% of the maximum allowable headworks loading (100% used for BOD_5, total suspended solids, ammonia, phosphorus, and total nitrogen), or there is an existing limit. EPA's

local limits guidance manual suggests that for most pollutants, where no current limit exists and the average influent loading is greater than 60% of the maximum allowable headworks loading or the maximum influent loading is greater than 80% of the maximum allowable headworks loading, a new local limit should be adopted. Based on this evaluation, the table suggests that, in addition to the pollutants for which limits currently exist, a limit is necessary for BOD_5 based on the maximum influent loading and for phosphorus, total nitrogen, and bis (2-ethylhexyl) phthalate based on both the average and maximum influent loadings.

For BOD_5 the suggestion that a new limit is necessary is based on a single influent result that is significantly different than the typical influent result. Since the maximum allowable headworks loading is based on a monthly average design limit, a single exceedance based on a daily sample result is not significant and based on the results of the enclosed calculations it would be acceptable if the Authority chose not to adopt a local limit for BOD_5. Note that the calculated local limit for BOD_5 is not unusually high so if the Authority wanted to adopt a limit it would not be an unreasonable approach.

For phosphorus and total nitrogen, since the treatment plant upgrade has not yet been completed the Authority will not be required to adopt a local limit at this time, but should be prepared to address this pollutant in the next local limits evaluation.

For bis (2-ethylhexyl) phthalate it appears that the suggestion that a new limit is necessary is based on the relatively high detection levels used in the influent and effluent analysis (0.05 mg/l). If the Authority wants to justify not adopting a limit it will need to collect additional data using a more sensitive analytical method in order to determine whether a limit is needed. This will also help determine a better removal rate for use in calculating the limit. If there is no data currently available, it would be acceptable for the Authority to postpone adopting a limit at this time while additional data is collected. If the Authority chooses this approach, influent, effluent, sludge, and nonindustrial sampling should be conducted periodically to collect data for the next reevaluation. Collecting this data quarterly with the other influent, effluent, and sludge monitoring should enable the Authority to establish a sufficient data set to conduct a meaningful evaluation provided a more sensitive analytical method is used.

Evaluation of Calculations - Table 21 of the enclosed spreadsheet shows the influent, effluent, and sludge goals based on the local limits reevaluation as adjusted in accordance with the comments above. The influent goal is the maximum allowable headworks loading converted to a concentration using the average POTW flow from the reevaluation. Based on the reevaluation, this is the influent level that should not be exceeded in order to prevent effluent, sludge, or inhibition problems. The effluent goal is the allowable headworks loading based on protection of water quality, adjusted by the removal assumed in the reevaluation, and converted to a concentration. The effluent goal is the theoretical "limit" that the effluent should meet in order to protect water quality. The sludge goal is the exceptional quality standard for land application of sludge, which was used as the sludge protection criteria in the reevaluation. Evaluating these goals against the actual monitoring data can help assess whether problems exist in the limits reevaluation.

Table 22 compares the influent, effluent, and sludge goals to the monitoring data in the "POTW Monitoring Data" spreadsheet and highlights any exceedances in red bold. As shown on Table 22, this evaluation indicates that at the current influent levels there would be occasional

exceedances of both the influent and effluent goals for copper and mercury. This suggests that a reduction in the levels of these pollutants in the influent is necessary to consistently meet the effluent goals. Therefore it appears that the reduction in the calculated local limit when compared to the existing limit is appropriate. For lead there are influent exceedances with no corresponding effluent or sludge exceedances. This suggests that the influent goal (and therefore the maximum allowable headworks loading) is more stringent than necessary. As noted above, the removal rate used in the enclosed spreadsheet was selected to maximize the maximum allowable headworks loading and the evaluation may suggest that some of the influent monitoring results may not be representative. For PCBs and bis (2-ethylhexyl) phthalate all of the influent and effluent results exceed the respective goals but this is based mainly on non-detectable data. While the PCBs analysis was done with a reasonably low detection level, the detection level for bis (2-ethylhexyl) phthalate will need to be lowered. For zinc and BOD_5 the table shows a single influent exceedance with no effluent or sludge exceedances. The single exceedance is probably not significant, although the Authority could try to make adjustments to the zinc evaluation to see if a more appropriate result can be obtained. Any adjustments that the Authority makes should be explained in its next submission. Finally, the evaluation shows that more than half of the influent results for phosphorus and total nitrogen exceed the influent goal. The Authority believes that the exceedances for phosphorus are due to the unusually low flows that occurred in January and February 2011. Please provide additional influent data for phosphorus to help confirm this. For total nitrogen, since the treatment plant upgrade has not been completed, the influent exceedances are probably not unexpected. As noted above, after completion of the upgrade the Authority will need to reevaluate the need for a limit for these two pollutants.

Westerly WWTF

POTW Monitoring Data Spreadsheet

The data in the enclosed "POTW Monitoring Data" spreadsheet is essentially the same as the data included in the Data Summary tables in the Authority's submission. However, the Authority's handling of non-detectable results was reevaluated and revised in some instances. Note that the Authority's submission used a "<" sign to indicate non-detectable values in the sampling data. Entering the "<" sign (or any other non-numerical character) in the cell with the sample data causes the spreadsheet to read the data in that cell as a non-numerical value and ignore the data for purposes of any calculations. Since eliminating the non-detectable values generally eliminates the lower values it can have a fairly significant impact on the calculations that are based on that data. Therefore in using the spreadsheet the Authority should avoid using any non-numerical character unless the intent is to eliminate that data point from the evaluation. This is typically only done when a data point is considered to be not representative of the data set in general. To enter and use non-detectable values, the data should be entered without the "<" sign but the cell color coded as discussed below to indicate that the result was reported as non-detectable.

In general, where most or all of the results for a pollutant at a given sample point are reported as non-detectable, I recommend use of half the detection limit as a surrogate for use in the calculations. This assumes that where most or all of the results are reported as non-detectable, the actual result is likely to be well below the detection limit. Where only a few of the results for a pollutant at a given sample point are reported as non-detectable, I recommend use of the detection limit as a surrogate. This assumes that where only a few of the results are reported as non-detectable, the actual result is likely to be near the detection limit. The recommended handling of

the non-detectable values is shown in the attached spreadsheet using pink shading to indicate use of half the detection limit in place of non-detectable values and using green shading to indicate use of the detection limit in place of non-detectable values.

In addition, there were a number of sample results that I eliminated from the data set. Version 4.0 (as does Version 3.3) of the local limits spreadsheet determines the standard deviation of the data set and highlights any value that is different than the average by more than two times the standard deviation. As suggested in the EPA local limits guidance, these values are considered to be outliers (not representative of the data set) and were eliminated from the data set (grey shaded cell with an "X" after the result). Since the Authority included additional monitoring data since its last submission of the evaluation, data points that were eliminated based on my previous comments were included in the evaluation of the data set and only eliminated if this new evaluation showed them as outliers. Note that after elimination of any data points based on this evaluation, the spreadsheet recalculates the standard deviation and reassesses the data set but these secondary outliers were not eliminated from the data sets. I also eliminated sample results where the detection limit for non-detectable values was above the average for the pollutant and sample point (grey shaded cell with "<" before the result). This assumes that a non-detectable result should not be greater than a majority of the detectable results.

Note that for total nitrogen, based on our conversation it is my understanding that the biological nitrogen removal system for the Westerly Plant came on line in September 2011. Since the Authority does not have a design load for nitrogen, the maximum allowable headworks loading would be developed using the Authority's NPDES limit and the treatment plant removals. However, the influent and effluent data included in the Authority's reevaluation is from January through March 2011 and therefore does not represent the removals based on the new biological nitrogen removal system. To address this, the enclosed spreadsheet uses the average effluent for total nitrogen for the period of January 1, 2012 through June 16, 2012 from the sampling data that you provided to me in your email of July 13. If a different time period is more appropriate based on the start up of the biological nitrogen removal system, the Authority should adjust the effluent value used in the calculation of the removal rate. No change was made to the influent data in the Authority's submission since the data that you provided in July did not include influent data. Therefore the enclosed spreadsheet assumes that the influent levels of total nitrogen have not changed from early 2011 to 2012.

Local Limits Calculation Spreadsheet

Table 3 - NPDES Effluent Limits – Table 3 includes cells to add additional pollutants for the evaluation. When entering these additional pollutants, it is important that they be added in the same order that the pollutants are added in the "POTW Monitoring Data" spreadsheet to ensure that removals and other data are brought into the "Local Limits Calculation" spreadsheet correctly. While the Authority's submission lists the data for PCBs before bis (2-ethylhexyl) phthalate in the "POTW Monitoring Data" spreadsheet, bis (2-ethylhexyl) phthalate is listed before PCBs in the "Local Limits Calculation" spreadsheet. The enclosed spreadsheet moves PCBs before bis (2-ethylhexyl) phthalate on the "Local Limits Calculation" spreadsheet to match the order of the pollutants in the "POTW Monitoring Data" spreadsheet.

The Authority's submission uses an NPDES permit limit of 0.8 mg/l for total nitrogen. It is my understanding that this NPDES limit was calculated converting the annual loading limits in the

NPDES permit to a daily concentration limit, although it appears that the limit was inadvertently switched with phosphorus in the Authority's submission since the Authority's NPDES permit includes a higher annual loading limit for total nitrogen than for phosphorus. Note that my comments above for the Easterly Plant suggested a concentration limit for total nitrogen based on the annual loading limit in the NPDES permit and the current flow to establish a limit that protects against NPDES violations at the current conditions. This change was not made to the Authority's submission, but would be an alternative approach that the Authority could use. In any case, the approach used by the Authority should be consistent for the two treatment plants.

The enclosed spreadsheet eliminates the NPDES limits that the Authority entered for BOD_5, total suspended solids, and phosphorus. EPA guidance suggests that the maximum allowable headworks loading for these pollutants should be based on the treatment plant design loading and therefore no calculations based on the NPDES limits need be done. Design loadings are added in Table 17 of the spreadsheet.

Based on the changes that I made to the handling of the influent, effluent, and sludge monitoring data (see comments under "POTW Monitoring Data Spreadsheet"), the removal rates used in the local limits calculations were revised. The selection of removal rate for each pollutant is shown in the "Select Removal Efficiency" column in Table 3 of the enclosed spreadsheet. In general, where actual influent and effluent data were available, a removal based on the average influent and the average effluent was selected. The enclosed spreadsheet uses the influent/effluent removal for mercury, zinc, antimony, toluene, xylene, total nitrogen and PCBs. Note that for antimony, toluene, xylene, and PCBs there was very little data available and so the selected removals are suspect. Where the influent/effluent removal could not be used, a removal based on the average influent load and average sludge load was used. The enclosed spreadsheet uses the influent/sludge removal for arsenic, chromium, copper, molybdenum, nickel, selenium, and silver. Note that for copper there is influent and effluent data available that could be used for calculation of a removal rate. However, use of the influent/effluent removal results in a negative local limit based on protection of water quality. Since the Authority's effluent monitoring data for copper indicates that its effluent quality is generally below the effluent standard, this suggests that the influent/effluent removal is not appropriate and therefore the influent/sludge removal was used. Where the influent, effluent, and sludge data could not be used to determine a removal rate, EPA's default removal for activated sludge treatment plants was used. The enclosed spreadsheet uses the default removal for cadmium, cyanide, benzene, ethylbenzene, and bis (2-ethylhexyl) phthalate. Note that the default removals for benzene, ethylbenzene, and bis (2-ethylhexyl) phthalate are entered as user entered values since they are not already built into the spreadsheet. For ammonia, the Authority did not provide any influent data and therefore no removal rate could be calculated. The enclosed spreadsheet uses a "User Entered" removal of 0%. This selection results in an overly stringent maximum allowable headworks loading. Since the Authority does not have a design loading for ammonia, influent data will need to be used in order to calculate a removal rate and correctly determine the maximum allowable headworks loading.

For lead, a different approach was taken to determine a removal rate. Use of the influent/effluent removal or the EPA default removal results in a maximum allowable headworks loading that is periodically exceeded based on the influent monitoring data. Since there have been no exceedances of the effluent or sludge disposal standards based on the data included in the evaluation, this suggests that the maximum allowable headworks loading calculated using these

removals is too low. The influent/sludge removal is greater than 100% and consequently is not appropriate. Therefore, I determined the removal rate that would result in the highest possible maximum allowable headworks loading for lead for the Westerly Plant and included this value as a user entered removal rate. Using this removal results in a slightly higher maximum allowable headworks loading, although the resulting local limit is still lower than the current limit for the Westerly Plant.

Table 4 - Chronic Water Quality Standards – Table 4 of the enclosed spreadsheet calculates allowable headworks loadings based on chronic water quality standards, although if an NPDES limit is entered in Table 3, then no calculations based on water quality standards are needed since the NPDES limits already account for the water quality standards. However, there are several pollutants for which the Authority did not use NPDES limits and did not use water quality standards. Pollutants with chronic water quality standards for which the Authority did not use NPDES limits are antimony, benzene, ethylbenzene, toluene, xylene, PCBs, and bis (2-ethylhexyl) phthalate. PADEP's chronic water quality standards for these pollutants are included in Table 4 of the enclosed spreadsheet.

Table 5 - Acute Water Quality Standards – Table 5 of the enclosed spreadsheet calculates allowable headworks loadings based on acute water quality standards. Pollutants with acute water quality standards for which the Authority did not use NPDES limits are antimony, benzene, ethylbenzene, toluene, xylene, and bis (2-ethylhexyl) phthalate. PADEP's acute water quality standards for these pollutants are included in Table 5 of the enclosed spreadsheet.

Table 6 – Human Health Water Quality Standards – Table 6 of the enclosed spreadsheet calculates allowable headworks loadings based on human health water quality standards. Pollutants with human health water quality standards for which the Authority did not use NPDES limits are antimony, benzene, ethylbenzene, toluene, xylene, PCBs, and bis (2-ethylhexyl) phthalate. PADEP's human health water quality standards for these pollutants are included in Table 6 of the enclosed spreadsheet. Note that human health standards based on threshold human health effects use the Q_{7-10} stream flow while human health standards based on cancer risk level use the harmonic mean stream flow. This selection is shown in the "Select Basis of Standard" column, with the stream flow used in the allowable headworks loading calculations shown in the "Receiving Stream Flow" column.

Table 8 – Activated Sludge Inhibition – Table 8 calculates the allowable headworks loadings based on inhibition of the activated sludge units. The Authority's submission did not include activated sludge inhibition calculations for benzene, ethylbenzene, or toluene. Since inhibition criteria are available in EPA's local limits guidance for these pollutants, they should be included in the Authority's calculations. The enclosed spreadsheet uses these inhibition criteria from Appendix G of EPA's local limits guidance. Note that since primary removals are not available for these pollutants, a removal of 0% is used in the enclosed spreadsheet as the most conservative approach. Use of this removal indicates prevention of activated sludge process inhibition is not the determining factor for establishing limits for these pollutants.

Table 13 - Comparison of Inhibition Loadings - Table 13 of Version 4.0 of the EPA local limits spreadsheet includes an area for the user to indicate whether or not inhibition has occurred in the treatment plant during the time frame in which the influent data was collected. This table of the spreadsheet also selects the lowest of the calculated allowable headworks loadings based on

inhibition and, if no inhibition has occurred, compares this value with the calculated loading based on the maximum influent concentration (from the "POTW Monitoring Data" worksheet) and selects the larger of the two as the allowable headworks loading based on inhibition. Where no inhibition has occurred, the treatment plant has demonstrated that it can accept these measured concentrations without inhibition, and therefore it may not be appropriate to select a lower allowable headworks loading based on inhibition. The table also includes an area to manually enter the maximum influent concentration if this concentration was either eliminated from consideration in the "POTW Monitoring Data" worksheet or otherwise not included in the influent data set. Note that this adjustment assumes that no inhibition has occurred at the Authority's treatment plant. If the Authority has experienced inhibition at the treatment plant, the maximum allowable headworks loading should not be adjusted based on the maximum influent concentration, and the spreadsheet will not make this comparison if the "Yes" cell is checked to indicate that inhibition has occurred. Note also that changes that were made in the data handling (see comments under "POTW Monitoring Data Spreadsheet") impacted some of the maximum influent concentrations that were automatically transferred to this table. Therefore the maximum influent concentration for copper, lead, mercury, molybdenum, nickel, silver, zinc, and PCBs was manually entered in the enclosed spreadsheet based on maximum values that were eliminated from the influent data sets for these pollutants, although this data only impacted the final maximum allowable headworks loading for copper and zinc. If the Authority believes that these results were reported in error rather than simply unusual concentrations that actually occurred they should not be used in the evaluation.

Table 17 - Comparison of All Allowable Headworks Loadings - Table 17 selects the most stringent of the calculated allowable headworks and design loadings where applicable. This most stringent allowable loading is then used as the maximum allowable headworks loading in order to determine the appropriate local limits. Based on the information that you provided regarding the design basis for the Westerly Plant I recommend that the Authority use the design maximum monthly loading for the evaluation, and design loadings in the enclosed spreadsheet have been revised for BOD_5, total suspended solids, and phosphorus. It is my understanding that the Authority's engineers did not determine a design loading for ammonia or total nitrogen and therefore the design loadings for these two pollutants have been deleted in the enclosed spreadsheet. If no design loading is available, the maximum allowable headworks loading for these two pollutants should be determined based on the allowable headworks loading calculations using the NPDES permit limits.

Table 18 - Calculation of Local Limits – In general, EPA recommends a safety factor of between 10% and 25%, with an additional growth factor if significant growth is expected within the service area. The Authority used a safety factor of 5% for the metals in its evaluation. Although this is acceptable, EPA generally recommends that a higher safety factor and growth factor be used to account for variability in the data, to ensure that user violations do not cause problems and that there is available capacity for new users to enter the system. The enclosed spreadsheet uses a safety factor of 10% for all metals. No growth factor is included, but if the Authority anticipates growth within the service area of the Westerly Plant then an appropriate growth factor should included as well.

As noted above, adjustments were made to the data handling on the non-industrial monitoring results in the "POTW Monitoring Data" worksheet. The effects of these adjustments are reflected in the nonindustrial concentration column in Table 18 and therefore impact the nonindustrial loadings listed in this table. The Authority's submission did not include nonindustrial data for arsenic, cadmium, chromium, ammonia, BOD5, total suspended solids, antimony, benzene,

ethylbenzene, toluene, xylene, phosphorus, total nitrogen, PCBs, and bis (2-ethylhexyl) phthalate. With the exception of cadmium and ammonia, the nonindustrial concentration used in the enclosed spreadsheet for these pollutants is the average influent concentration. For cadmium, use of the influent concentration resulted in a negative local limit. Therefore the enclosed spreadsheet does not use a nonindustrial concentration (assumes zero loading of cadmium). While this is not normally a valid approach, it does result in a limit that is more stringent than the existing limit and suggests that the existing limit needs to be revised. Since most of the influent data was reported as non-detectable, the Authority should conduct additional nonindustrial monitoring using a more sensitive analytical method than was used for the influent sampling in order to obtain a more appropriate nonindustrial loading. One approach would be to adopt the limit using no nonindustrial loading as an interim limit while additional data is collected for the next reevaluation using the more sensitive analytical method. Note that the more sensitive method should be used for the influent and effluent monitoring as well to better characterize the removal rate. For ammonia, no influent data was provided for the Westerly Plant and therefore the nonindustrial concentration from the Easterly Plant is used in the enclosed spreadsheet for the Westerly Plant. The Authority's sampling plan indicated that it would collect nonindustrial data for all of these pollutants so the Authority should provide the data in its revised submission. If the Authority believes that the data is not valid for any reason, it should provide the data along with an explanation of why it is not being used and what data is being used in its place. For mercury, the nonindustrial concentration shown in the enclosed spreadsheet is based on the average influent concentration. The data in the "POTW Monitoring Data" spreadsheet indicates that the nonindustrial concentration for mercury is almost an order of magnitude higher than the influent concentration, and this higher nonindustrial concentration resulted in a negative local limit. Since the nonindustrial flow is over 98% of the actual flow, it seems unlikely that the nonindustrial concentration would be significantly higher than the influent concentration. For bis (2-ethylhexyl) phthalate the nonindustrial concentration in the enclosed spreadsheet is listed as 0.006 mg/l. The nonindustrial concentration in the Authority's submission is based on data that was mostly reported as non-detectable using a relatively high detection limit (0.05 mg/l) and appears to contribute to calculation of a negative local limit. The enclosed spreadsheet uses EPA's default nonindustrial concentration from Appendix V of EPA's local limits guidance.

The Authority's submission included calculated limits that were negative for five pollutants, and did not calculate limits for another seven pollutants. Since it is impossible for a user to comply with a negative limit, it is not appropriate for the Authority to establish a negative limit. Based on the changes recommended above the negative limits included in the Authority's submission have been addressed and would no longer be negative after making the adjustments noted above. However, the enclosed spreadsheet is showing negative local limits for one of the pollutants for which the Authority did not calculate limits (PCBs) as well as for ammonia. For PCBs, the low water quality standard often results in negative limits. My recommendation to address this issue would be for the Authority to adopt a no discharge limit with compliance with the no discharge limit shown through a non-detectable result using EPA method 608 (the most sensitive PCBs method currently listed in 40 CFR 136). For ammonia, the elimination of the design loading entered by the Authority and the use of the 0% removal rate to calculate results in an overly stringent maximum allowable headworks loading. As noted above, the Authority will need to use influent and effluent ammonia data to calculate a removal rate and determine an appropriate maximum allowable headworks loading.

Table 19 - Comparison of Limits - This table compares the existing and calculated local limits to

highlight which limits would be made more stringent (green bold) and which less stringent (brown bold) based on the calculations. In addition, this table includes a column to show the limits proposed in the Authority's submission and would highlight (in red bold) any proposed limits that are less stringent than the limits calculated in the spreadsheet. However, the Authority did not propose specific limits with its submission and so no proposed limits are included in this table. The Authority's revised submission must include the limits that it proposes based on the reevaluation.

The table also highlights other issues (in the "Other Issues" column), and notes "Need Limit?" where no limit was proposed but where the current average percent loading (shown in Table 20) is greater than 60% of the maximum allowable headworks loading (80% used for BOD_5, total suspended solids, ammonia, phosphorus, and total nitrogen), the current maximum percent loading is greater than 80% of the maximum allowable headworks loading (100% used for BOD_5, total suspended solids, ammonia, phosphorus, and total nitrogen), or there is an existing limit. EPA's local limits guidance manual suggests that for most pollutants, where no current limit exists and the average influent loading is greater than 60% of the maximum allowable headworks loading or the maximum influent loading is greater than 80% of the maximum allowable headworks loading, a new local limit should be adopted. Based on this evaluation, the table suggests that, in addition to the pollutants for which limits currently exist, a limit is necessary for ammonia and bis (2-ethylhexyl) phthalate based on both the average and maximum influent loadings, and for BOD_5 and total nitrogen based on the maximum influent loading.

~~For BOD_5 and total nitrogen the suggestion that a new limit is neeessary is based on a single~~ influent result for each pollutant. Since the maximum allowable headworks loading for BOD_5 is based on a monthly average design limit and the maximum allowable headworks loading for total nitrogen is based on an annual loading limit, a single exceedance based on a daily sample result is not significant. Therefore, based on the results of the enclosed calculations it would be acceptable if the Authority chose not to adopt a local limit for BOD_5 or total nitrogen for the Westerly Plant.

For bis (2-ethylhexyl) phthalate it appears that the suggestion that a new limit is necessary is based on the relatively high detection levels used in the influent and effluent analysis (0.05 mg/l). If the Authority wants to justify not adopting a limit it will need to collect additional data using a more sensitive analytical method in order to determine whether a limit is needed. This will also help determine a better removal rate for use in calculating the limit. If there is no data currently available, it would be acceptable for the Authority to postpone adopting a limit at this time while additional data is collected. If the Authority chooses this approach, influent, effluent, sludge, and nonindustrial sampling should be conducted periodically to collect data for the next reevaluation. Collecting this data quarterly with the other influent, effluent, and sludge monitoring should enable the Authority to establish a sufficient data set to conduct a meaningful evaluation provided a more sensitive analytical method is used.

For ammonia, as noted above the maximum allowable headworks loading is based on calculations that use a 0% removal which is unlikely to be representative of the actual treatment plant conditions. The Authority will need to adjust the removal rate based on actual influent data and reassess the need for a limit based on the revised calculations.

Evaluation of Calculations - Table 21 of the enclosed spreadsheet shows the influent, effluent, and sludge goals based on the local limits reevaluation as adjusted in accordance with the comments

above. The influent goal is the maximum allowable headworks loading converted to a concentration using the average POTW flow from the reevaluation. Based on the reevaluation, this is the influent level that should not be exceeded in order to prevent effluent, sludge, or inhibition problems. The effluent goal is the allowable headworks loading based on protection of water quality, adjusted by the removal assumed in the reevaluation, and converted to a concentration. The effluent goal is the theoretical "limit" that the effluent should meet in order to protect water quality. The sludge goal is the exceptional quality standard for land application of sludge, which was used as the sludge protection criteria in the reevaluation. Evaluating these goals against the actual monitoring data can help assess whether problems exist in the limits reevaluation.

Table 22 compares the influent, effluent, and sludge goals to the monitoring data in the "POTW Monitoring Data" spreadsheet and highlights any exceedances in red bold. As shown on Table 22, this evaluation indicates that at the current influent levels there may be an occasional exceedance of the effluent goal for copper. This suggests that a reduction in the level of this pollutant is necessary to consistently meet the effluent goal. Therefore it appears that the reduction in the calculated local limit when compared to the existing limit is appropriate. For cadmium, PCBs and bis (2-ethylhexyl) phthalate all of the influent and effluent results exceed the respective goals but this is based mainly on non-detectable data. While the PCBs analysis was done with a reasonably low detection level, the detection level for cadmium and bis (2-ethylhexyl) phthalate will need to be lowered for future analyses. For BOD_5 and total nitrogen, as discussed above, the single exceedance based on a daily sample result is not significant because of the basis of these maximum allowable headworks loadings.

Please provide a response to the issues raised above along with a revised local limits evaluation for each treatment plant. If you have any questions regarding this matter, please contact me at 215-814-5790.

Sincerely,

John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division

Enclosures

cc: Lynn Langer, PADEP Southcentral Region (w/out enclosures)
Ron Furlan, PADEP Central Office (w/out enclosures)

ALTOONA WATER AUTHORITY

June 29, 2012

Mr. John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Local Limits Calculations, Altoona Water Authority's Westerly Wastewater Treatment
NPDES PA0027014

Dear Mr. Lovell,

Enclosed is the spreadsheet data for the headworks evaluation for the Easterly Wastewater Treatment Facility on version 3.3.

You will note that new data has been added to the attached spreadsheets that was taken from the monthly DMRs and the detection levels are also included. The hardness sample for the Little Juniata River was taken on May 23, 2012 above the discharge point with a result of 132 mg/l. This result was recorded on page 1 of the Limits Calculations. Sampling and tests were conducted for hardness as data was gathered but was not saved by our lab personnel.

The current design loadings for Ammonia, BOD, TSS, Total Phosphorus and Total Nitrogen have been listed on Page 16. Included with the version 3.3 spreadsheet is additional supporting data for the Westerly sampling, background data and influent and effluent data for BOD, TSS, TKN, Phosphorus, Ammonia and Nitrogen. This data has been placed on the Monitoring Data spreadsheet.

I believe the data included meest the comments of your August 24, letter. If there are questions please call or e-mail.

Respectfully,

George C. Boliski
Environmental Services Manager

ALTOONA WATER AUTHORITY

May 23, 2012

Mr. John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Local Limits Calculations, Altoona Water Authority's Westerly Wastewater Treatment
NPDES PA0027022

Dear Mr. Lovell,

On behalf of the Altoona Water Authority and as required by the Administrative Order dated June 30, 2010, enclosed is the spreadsheet data for the headworks evaluation for the Westerly Wastewater Treatment Facility on version 3.3. The Phase II data is due by June 1, 2012 per the Administrative Order.

You will note that new data has been added to the attached spreadsheets that was taken from the monthly DMRs and the detection levels are also included. The hardness sample for the Beaver Dam Branch was taken on May 23, 2012 above the discharge point with a result of 90 mg/l. This result was recorded on page 1 of the Limits Calculations. Sampling and tests were conducted for hardness as data was gathered but was not saved by our lab personnel.

The current design loadings for Ammonia, BOD, TSS, Total Phosphorus and Total Nitrogen have been listed on Page 16. Included with the version 3.3 spreadsheet is additional supporting data for the Westerly sampling, background data and influent and effluent data for BOD, TSS, TKN, Phosphorus, Ammonia and Nitrogen. This data has been placed on the Monitoring Data spreadsheet.

The Westerly Facility Phase 2 construction was completed in April 2012 and the facility is meeting BNR requirements.

I believe the data included meet the comments of your August 24, letter. If there are questions please call or e-mail.

Respectfully,

George C. Boliski
Environmental Services Manager

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

AUG 24 2011

Mr. George C. Boliski
Environmental Services Manager
Altoona Water Authority
Wastewater Treatment Operations
144 Westerly Treatment Plant Road
Duncansville, Pennsylvania 16635-7800

Re: Pretreatment Program
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Boliski:

Thank you for your letter of December 23, 2010 that provided the Authority's reevaluation of the local limits for both the Easterly and Westerly Wastewater Treatment Facilities. Based on my review of the submissions, revisions will be necessary before the reevaluations will be acceptable for approval. Although many of the comments are similar, separate comments are provided below for each facility. To illustrate the potential impact of the suggested revisions, enclosed is a copy of a revised local limits spreadsheet (version 3.3) for each facility showing the changes that are described below.

Easterly WWTF

The Authority used EPA's local limits spreadsheet, version 3.1 and provided additional supporting data via email. Although most of the data used in the evaluation was provided, there was no indication of which values represented non-detectable sample results. In order to conduct a more detailed review of the use of the sampling data, I will need an indication of which if any of the sampling results were reported as non-detectable as well as the detection level used in the analysis for each of those results. Please provide this information.

Several of the limits calculated by the Authority are shown as negative. Since it is not possible to meet a negative local limit, this is not a usable result. In order to provide suggestions on how to eliminate the negative limits and obtain limits that make sense, I will need the information requested above on the non-detectable sample results.

The Authority provided background data for the pollutants of concern as required, with the data for BOD_5 and TSS listed in separate tables. However, the background sampling results for BOD_5 are identical to the sampling results for TSS. Since this would be highly unlikely, it appears that one or both of the tables is incorrect. Please provide corrected background data for BOD_5 and TSS.

In the *POTW Monitoring Data* spreadsheet, the Authority included only the average of the monitoring data for each sample point for each pollutant. While this will still allow the spreadsheet to calculate removals and the resulting local limits, it does eliminate some of the functionality of the spreadsheet. Specifically, Table 13 of the spreadsheet compares the allowable headworks loading based on inhibition for each pollutant to the highest measured loading (based on highest influent concentration and average POTW flow) for each pollutant. If the highest measured loading is greater than the allowable headworks loading based on inhibition, the spreadsheet will use the highest measured loading as the allowable headworks loading based on inhibition. Note that this assumes that no inhibition has occurred. If inhibition has occurred, the calculated allowable headworks loading should be used. In addition, Table 20 of the spreadsheet compares the maximum allowable headworks loading to the average and maximum influent loads and Table 22 of the spreadsheet evaluates the influent, effluent, and sludge monitoring data against the influent, effluent, and sludge goals for the treatment plant based on the local limits calculations. These evaluations can be helpful in determining whether the calculated local limits make sense, but cannot be completed unless all of the influent, effluent, and sludge data are included in the *POTW Monitoring Data* spreadsheet. For these reasons it is recommended that the Authority enter all of the monitoring data in the *POTW Monitoring Data* spreadsheet rather than simply the averages for each pollutant and sample point.

POTW Monitoring Data Spreadsheet

The enclosed *POTW Monitoring Data* spreadsheet includes the data submitted by the Authority with its local limits reevaluation. Based on an evaluation of the data, there were a number of sample results that I eliminated from the data set. Version 3.3 of the local limits spreadsheet determines the standard deviation of the data set and highlights any value that is different than the average by more than two times the standard deviation. As suggested in the EPA local limits guidance, these values are considered outliers and were eliminated from the data set (grey shaded cells with an "X" after the result). Note that to conduct this type of statistical analysis there would ideally be at least 20 sample results for each pollutant at each sample point. If additional results are available since the original submission of the reevaluation it would be helpful to include those results in the resubmission. Typically I would also eliminate sample results where the detection limit for non-detectable values was above the average for the pollutant and sample point. This assumes that a non-detectable result should not be greater than a majority of the detectable results. However, since there was no indication of which results represented non-detectable results, this could not be done. In addition, where most or all of the results for a pollutant at a given sample point are reported as non-detectable, I typically recommend use of half the detection limit as a surrogate in performing the calculations. This assumes that where most or all of the results are reported as non-detectable, the actual result is likely to be well below the detection limit. Where only a few of the results for a pollutant at a given sample point are reported as non-detectable, I recommend use of the detection limit as a surrogate. This assumes that where only a few of the results are reported as non-detectable, the actual result is likely to be near the detection limit. Again, this was not done on the enclosed spreadsheet since there was no indication of which results were reported as non-detectable.

The Authority conducted background (unregulated) sampling at five points in the collection system to estimate the loading of pollutants from unregulated users. Sampling at several locations within the collection system is appropriate to best characterize the loadings from unregulated users. Ideally, rather than simply averaging all of the data, it is best to evaluate the data for each sampling point separately (eliminating any unrepresentative data and addressing non-detectable results as discussed above), establish an average concentration for each sample point, and then average the resulting values for each sample point on a flow weighted basis. While measured flows at each sample point would be best, a reasonable estimate of the relative flows at each sample point would also be acceptable. Although the Authority did not provide a flow for each sample point and did not indicate which sample results were reported as non-detectable for its background sampling, I have enclosed several tables (Easterly WWTP Average Background Data) that use this approach. Grey shaded cells with an "X" after the result have been eliminated from the data set and not used in the averages because they were considered to be unrepresentative of the data set. The resulting average of the results of the five sample points (without flow-weighting) was then used as the background concentration in Table 18 of the enclosed *Local Limits Calculation* spreadsheet. Please provide an indication of which sample results were reported as non-detectable along with an indication of the detection level used in the analysis if different than the result included in the Authority's submission. If available, the relative flows of the five sample points should be provided as well.

Local Limits Calculation Spreadsheet

Table 2a – Stream Flow Partial Mix Factors

The Authority used a harmonic mean stream flow of 6.45 mgd, although there was no explanation of how this stream flow was obtained. Since no harmonic mean stream flow was provided by PADEP in the background material provided with the Authority's most recent draft NPDES permit, I eliminated the Authority's harmonic mean stream flow from Table 2a of the enclosed spreadsheet. The harmonic mean stream flow used in the calculations in the enclosed spreadsheet is therefore based on PADEP's default equation which uses the $Q_{7\text{-}10}$ stream flow to calculate the harmonic mean stream flow. This calculated stream flow is shown in Table 2b of the enclosed spreadsheet. If the Authority has justification for its selected harmonic mean stream flow, please provide additional information to support it.

Table 2b – POTW and Receiving Stream Data

Many of the Pennsylvania water quality standards for metals must be calculated based on the hardness of the receiving stream. The PADEP background material provided with the Authority's draft NPDES permit did not include a hardness for the receiving stream, and therefore a default hardness of 100 mg/l is used in the enclosed spreadsheet. If the Authority has information on the hardness for its receiving stream, please provide that data including an explanation of the source of the data.

Table 3 – NPDES Effluent Limits

The Authority included a number of "NPDES limits" in its submission, although did not provide the source of those limits and it appears that in many instances the values used are not appropriate. Limits for copper and zinc used by the Authority in the reevaluation are included in

the Authority's NPDES permit, and these limits were appropriately used by the Authority. Based on the PADEP background material provided with the Authority's draft NPDES permit, PADEP calculated several water quality based effluent limits (WQBELs) for the Authority's discharge that were not included in the Authority's NPDES permit. However, as part of the local limits reevaluation, it is appropriate to use these WQBELs as NPDES limits since they represent the limits that would have been included in the Authority's NPDES permit had limits been required. Table 3 includes WQBELs for arsenic, cadmium, chromium, lead, mercury, selenium, and antimony. Note that although the NPDES limits for ammonia, BOD_5, TSS, phosphorus, and nitrogen were not removed from the enclosed spreadsheet, EPA generally recommends that the maximum allowable headworks loading for pollutants such as these be based on the treatment plant design loading rather than the typical headworks loading calculations (see discussion below for Table 17).

In addition, based on the partial reevaluation of the influent, effluent, and sludge data discussed above many of the removals selected in Table 3 have changed from the removals used by the Authority. Note that additional evaluation of the data is necessary based on the detection level comment discussed above so the removals shown in the enclosed spreadsheet may need to be revised further.

Table 4 – Chronic Water Quality Standards

The Authority used chronic water quality standards for cyanide and mercury. Since an "NPDES limit" was included in the enclosed spreadsheet for mercury, no water quality standard is needed for this pollutant in the reevaluation (the NPDES limit is based on the water quality standards) and it has been deleted from Table 4. However, since chronic water quality standards exist for nickel, benzene, ethylbenzene, toluene, xylene, PCBs, and bis (2-ethylhexyl) phthalate and no NPDES limit was calculated by PADEP, the water quality standards must be used in the reevaluation and have been added in Table 4 of the enclosed spreadsheet. Note that Table 4 includes the receiving stream data provided by the Authority, but again the Authority did not provide an indication of which results were reported as non-detectable. Please provide this information.

Table 5 – Acute Water Quality Standards

The Authority used acute water quality standards for cyanide and mercury. For the reason noted above, the acute water quality standard for mercury was deleted in Table 5 as well. Since acute standards exist for nickel, silver, benzene, ethylbenzene, toluene, xylene, and bis (2-ethylhexyl) phthalate and no NPDES limit was calculated by PADEP, the water quality standards must be used in the reevaluation and have been added in Table 5 of the enclosed spreadsheet.

Table 6 – Human Health Water Quality Standards

The Authority used human health water quality standards for cyanide, mercury, and nickel. For the reason noted above, the human health water quality standard for mercury was deleted in Table 6 as well. Since human health standards exist for benzene, ethylbenzene, toluene, xylene, PCBs, and bis (2-ethylhexyl) phthalate and no NPDES limit was calculated by PADEP, the water quality standards must be used in the reevaluation and have been added in Table 6 of the enclosed spreadsheet. Note that the human health standards for ethylbenzene,

toluene, and xylene are based on threshold effects and therefore the Q_{7-10} stream flow is used in the allowable headworks loading calculations for these pollutants. For benzene, PCBs, and bis (2-ethylhexyl) phthalate the human health standards are based on cancer risk level and therefore the harmonic mean stream flow is used in the allowable headworks loading calculations for these pollutants.

Table 8 – Activated Sludge Inhibition

Where there is no removal efficiency entered in Table 8, the local limits spreadsheet does not calculate an allowable headworks loading based on activated sludge inhibition. Therefore the Authority's submission did not calculate an allowable headworks loading based on activated sludge inhibition for arsenic or ammonia and these must be added. In addition, EPA guidance includes activated sludge inhibition criteria for benzene (100 mg/l), ethylbenzene (200 mg/l), and toluene (200 mg/l) that the Authority did not include in its submission. These inhibition criteria must be added as well. Since no primary removal rates were available from the Authority or in EPA guidance for these five pollutants, the enclosed spreadsheet uses a primary removal of 0%. It appears that even with this conservative approach, inhibition of the activated sludge units is not the limiting criterion for the treatment plant for these pollutants.

Table 10 – Nitrification Inhibition

Version 3.1 of the EPA local limits spreadsheet (used by the Authority) included an error in Table 10. Unless a removal rate is entered in the "User Entered Removal Efficiency" column no allowable headworks loading is calculated. Although this error has been corrected in later versions of the spreadsheet, the easiest way to correct this issue in Version 3.1 of the spreadsheet is to enter the removal rates from the "Removal Efficiency" column in the "User Entered Removal Efficiency" column. The allowable headworks loadings are calculated on the enclosed spreadsheet.

Table 13 – Comparison of Allowable Headworks Loadings

Table 13 selects the most stringent of the allowable headworks loadings based on inhibition for each pollutant (in this case activated sludge and nitrification), compares this loading to the highest measured influent loading for that pollutant (calculated using the highest measured influent concentration from the *POTW Monitoring Data* spreadsheet and the average POTW flow from Table 2b) and selects the greater of these two loadings as the allowable headworks loading based on inhibition. This approach assumes that if there has been no inhibition at the treatment plant, then the allowable headworks loading based on inhibition should be no lower than the pollutant levels previously measured and shown to not cause inhibition. If the Authority has experienced inhibition at the treatment plant this approach should not be used. As noted above, the Authority's data entry in its *POTW Monitoring Data* spreadsheet included only the average influent value and so the Authority's submission does not take into account the previous influent levels in the inhibition evaluation. If the Authority's treatment plant has not experienced inhibition, it is recommended that the allowable headworks loading based on inhibition be no lower that the levels previously experienced and shown to not cause inhibition. One way to do this would be to include all of the influent data used in the evaluation in the *POTW Monitoring Data* spreadsheet.

Table 17 – Comparison of Allowable Headworks Loadings

In general, for pollutants such as BOD_5, TSS, ammonia, phosphorus, and nitrogen EPA recommends that the maximum allowable headworks loading be based on the treatment plant design loading to ensure that industrial users do not cause an overloading of the treatment plant. EPA guidance suggests that for a monthly average limit, the POTW use its average design capacity while for a daily maximum limit the POTW use its peak loading capacity. The EPA local limits spreadsheet has a place to enter the design loading in Table 17 for use in the evaluation, but no design loading data was provided by the Authority. Please provide the design loading information for these five pollutants, including an indication of whether the design loading is an average or peak loading.

Table 18 – Calculation of Local Limit

Table 18 includes a place to enter an appropriate safety factor in the development of the local limits. EPA guidance recommends that the safety factor generally be between 10% and 25% depending on site specific conditions. The safety factor used by the Authority for several pollutants is below 10% and is therefore highlighted in red on the enclosed spreadsheet. While this is within the Authority's discretion and may be appropriate given some of the limits calculated in the Authority's submission, a complete evaluation of the appropriateness of the safety factors cannot be completed until after the additional information on the Authority's sampling results is received.

As discussed above, the nonindustrial concentrations listed in Table 18 were reevaluated, and should be further reevaluated based on non-detectable results. As requested above, please provide an indication of which results were reported as non-detectable along with the detection level used in the analysis. Note that the value entered in the Authority's submission for the nonindustrial concentration for molybdenum (0.49 mg/l) appears to be in error since it is different than the average of the background data for this pollutant in the Authority's supporting data table (0.023 mg/l).

The Authority entered concentration values representing the hauled waste received by the Authority. Please provide the supporting sample results for this data. It is noted that the Authority did not enter any values for several pollutants. While the results of actual sampling is preferred, if no site specific data is available, the Authority can use data from EPA's hauled waste guidance manual and EPA's supplemental local limits guidance manual. If you need either of these guidance manuals, please let me know.

A number of the local limits calculated by the Authority and in the enclosed spreadsheet are negative. In many instances, these initial negative limits may be the result of inappropriate selection of removal rates and background concentrations. However, because the Authority's submission did not include an indication of which, if any, of the sample results were reported as non-detectable, a complete evaluation of the appropriateness of the values selected by the Authority was not possible. As requested above, please provide information on which sample results were reported as non-detectable along with an indication of the detection level used in the analysis.

Evaluation of Calculations

Table 20 of the enclosed spreadsheet shows the calculated maximum allowable headworks loading for each pollutant and compares this loading to the average and maximum influent loadings based on the Authority's monitoring data included in its submission. This evaluation can help indicate whether limits for new pollutants are needed and whether reductions in the current influent levels would be necessary in order to meet the calculated maximum allowable headworks loading. Since the evaluation of the maximum allowable headworks loadings has not been completed pending the identification of the non-detectable results, this table is of limited value at this time. However, prior to making its resubmission, the Authority should consider the information in this table and make adjustments as appropriate. For example, Table 20 shows that the current influent loading of molybdenum exceeds the maximum allowable headworks loading. In addition, Table 18 shows that the maximum allowable headworks loading for molybdenum is based on protection of sludge quality. However, the monitoring data submitted by the Authority shows that the level of molybdenum is consistently below the land application standard used to develop the maximum allowable headworks loading. This suggests that the calculated maximum allowable headworks loading is more stringent than necessary, likely caused by an estimated removal rate that is too high. Based on the data shown in the enclosed *POTW Monitoring Data* spreadsheet, the removal calculated from the influent and sludge data is significantly lower than the removal calculated from the influent and effluent data. Therefore it may be appropriate to use the influent/sludge removal or an average of the influent/effluent removal and the influent/sludge removal. The Authority should make this type of assessment as part of its resubmission of the reevaluation. An explanation of the reasons for any adjustment of this type should be included with the reevaluation.

Table 21 of the enclosure shows the influent, effluent, and sludge goals based on the local limits reevaluation as adjusted in accordance with the comments above. The influent goal is the maximum allowable headworks loading converted to a concentration using the average POTW flow from the reevaluation. Based on the reevaluation, this is the influent level that should not be exceeded in order to prevent effluent, sludge, or inhibition problems. The effluent goal is the allowable headworks loading based on protection of water quality, adjusted by the removal assumed in the reevaluation, and converted to a concentration. The listed effluent goal would be either the actual NPDES limit used in the calculations or the theoretical limit that the effluent should meet in order to protect water quality. The sludge goal is the exceptional quality standard for land application of sludge, which was used as the sludge protection criteria in the reevaluation. Evaluating these goals against the actual monitoring data can also help assess whether problems exist in the limits reevaluation.

Table 22 compares the influent, effluent, and sludge goals to the monitoring data in the *POTW Monitoring Data* spreadsheet and highlights any exceedances in red bold. As shown on Table 22, this evaluation indicates that at the current influent levels there would be exceedances of both the influent and effluent goals for several pollutants. It appears that many of these exceedances may be based on non-detectable sample results, and therefore a full evaluation of the data cannot be completed without an indication of which sample results were reported as non-detectable. Again, however, the Authority should consider the information in this table and

make adjustments as appropriate prior to resubmitting the reevaluation. For example, for molybdenum there are influent exceedances with no corresponding effluent or sludge exceedances. This supports the assessment based on Table 20 that the influent goal for molybdenum is more stringent than necessary and an adjustment to the removal rate may be needed. Note that since the effluent goals for copper and phosphorus are NPDES permit limits, the exceedance of these effluent goals is a potentially a more significant issue, although both effluent goals are monthly average limits rather than daily maximum limits.

Westerly WWTF

It is my understanding that the Westerly treatment plant is currently under construction and therefore the local limits evaluation for this treatment plant only included ammonia, BOD_5, TSS, nitrogen, and phosphorus. Please provide an estimated date for completion of construction and submission of the full local limits evaluation for the Westerly treatment plant.

In general, for pollutants such as BOD_5, TSS, ammonia, phosphorus, and nitrogen the maximum allowable headworks loading should be based on the treatment plant design loading to ensure that industrial users do not cause an overloading of the treatment plant. EPA guidance suggests that a monthly average local limit be based on the POTW average design capacity while a daily maximum local limit be based on the peak loading capacity. The EPA local limits spreadsheet has a place to enter the design loading in Table 17 for use in the evaluation, but no design loading data was provided by the Authority. Please provide the design loading information for these five pollutants, including an indication of whether the design loading is an average or peak loading. Note that the design loading should be based on the treatment plant after construction is complete. This will allow the Authority to establish local limits, if necessary, that will protect the new treatment plant.

Although a headworks analysis has not yet been completed for the toxic pollutants for the Westerly treatment plant, several comments are provided below for your use in finalizing the evaluation for the toxic pollutants. Note that many of the comments provided above for the Easterly treatment plant may also need to be addressed when the limits evaluation for the Westerly treatment plant is completed.

The Authority used EPA's local limits spreadsheet, version 3.1 and provided additional supporting data via email. Although most of the data used in the evaluation was provided, there was no indication of which values represented non-detectable sample results. In order to conduct a more detail review of the use of the sampling data, I will need an indication of which if any of the sampling results were reported as non-detectable and detection level used in the analysis for each of those results. Please provide this information.

POTW Monitoring Data Spreadsheet

Although the Authority did not include the monitoring data for the toxic pollutants in its local limits spreadsheet for the Westerly plant, a separate spreadsheet was provided that included the monitoring data. Note that with the exception of nickel, the influent results provided by the

Authority for the September 22, 2009 and December 8, 2009 are identical to the effluent results for those dates. Since this seems unlikely, the Authority should review its influent and effluent monitoring data and ensure that the correct results are used in the evaluation. Note that the data handling recommendations provided for the Easterly treatment plant also apply for the data for the Westerly treatment plant, although because of the uncertainty of some of the results provided, no specific suggestions have been made for this data.

The Authority conducted background (unregulated) sampling at six points in the collection system to estimate the loading of pollutants from unregulated users. Sampling at several locations within the collection system is appropriate to best characterize the loadings from unregulated users. Ideally, rather than simply averaging all of the data, it is best to evaluate the data for each sampling point separately (eliminating any unrepresentative data and addressing non-detectable results as discussed above), establish an average concentration for each sample point, and then average the resulting values for each sample point on a flow weighted basis. While measured flows at each sample point would be best, a reasonable estimate of the relative flows at each sample point would also be acceptable. Although the Authority did not provide a flow for each sample point and did not indicate which sample results were reported as non-detectable for its background sampling, I have enclosed several tables (Westerly WWTF Average Background Data) that use this approach. Grey shaded cells with an "X" after the result have been eliminated from the data set and not used in the averages because they were considered to be unrepresentative of the data set. The resulting average of the results of the six sample points (without flow-weighting) was then used as the background concentration in Table 18 of the enclosed spreadsheet. Please provide an indication of which sample results were reported as non-detectable along with an indication of the detection level used in the analysis if different than the result included in the Authority's submission. If available, the relative flows of the six sample points should be provided as well.

Local Limits Calculation Spreadsheet

Table 2a – Stream Flow Partial Mix Factors

The Authority used a $Q_{7\text{-}10}$ stream flow of 3.2 mgd and a harmonic mean stream flow of 12.86 mgd, although there was no explanation of how these stream flows were obtained. Based on the background material provided by PADEP with the draft NPDES permit for the Westerly facility, PADEP used a $Q_{7\text{-}10}$ stream flow of 3.94 mgd (6.09 cfs) and a harmonic mean stream flow of 23.29 mgd (36.04 cfs). These stream flows are included in the enclosed spreadsheet for the Westerly treatment plant. If the Authority has justification for its selected stream flows, please provide additional information to support them.

Table 2b – POTW and Receiving Stream Data

The Authority used a POTW flow of 8.98 mgd and a sludge flow to disposal of 1.9 dry metric tons per day. Based on data submitted with the Authority's DMRs, I calculated an average discharge flow for the Westerly treatment plant of 7.93 mgd and a sludge flow to disposal of 1.7 dry metric tons per day. Enclosed are two spreadsheets showing the data that was downloaded from our computer system along with the calculated averages. These revised flows are included in the enclosed local limits spreadsheet. If you believe that the flows used in the

Authority's submission are more appropriate, please provide additional information on how those flows were developed.

Table 3 – NPDES Effluent Limits

The Authority's submission did not include water quality calculations for toxic pollutants as noted above. When this part of the reevaluation is completed, the Authority should include any NPDES limits for these pollutants in the evaluation. This would include the Authority's copper limit of 0.018 mg/l. In addition, based on the PADEP background material provided with the Authority's draft NPDES permit, PADEP calculated several water quality based effluent limits (WQBELs) for the Authority's discharge that were not included in the Authority's NPDES permit. As part of the local limits reevaluation, it is appropriate to use these WQBELs as NPDES limits since they represent the limits that would have been included in the Authority's NPDES permit had limits been required. Table 3 of the enclosed local limits spreadsheet includes WQBELs for lead, mercury, selenium, and zinc. Note that although the NPDES limits for ammonia, BOD_5, TSS, phosphorus, and nitrogen were not removed from the enclosed spreadsheet, EPA generally recommends that the maximum allowable headworks loading for pollutants such as these be based on the treatment plant design loading rather than the typical headworks loading calculations (see discussion below for Table 17).

Table 17 – Comparison of Allowable Headworks Loadings

In general, for pollutants such as BOD_5, TSS, ammonia, phosphorus, and nitrogen EPA recommends that the maximum allowable headworks loading be based on the treatment plant design loading to ensure that industrial users do not cause an overloading of the treatment plant. EPA guidance suggests that for a monthly average limit, the POTW use its average design capacity while for a daily maximum limit the POTW use its peak loading capacity. The EPA local limits spreadsheet has a place to enter the design loading in Table 17 for use in the evaluation, but no design loading data was provided by the Authority. Please provide the design loading information for these five pollutants, including an indication of whether the design loading is an average or peak loading. Note that the design loadings should be based on the completed construction so that any potential limits apply to the new treatment plant.

Evaluation of Calculations

Table 20 of the enclosed spreadsheet shows the calculated maximum allowable headworks loading for each pollutant and compares this loading to the average and maximum influent loadings based on the Authority's monitoring data included in its submission. This evaluation can help indicate whether limits for new pollutants are needed and whether reductions in the current influent levels would be necessary in order to meet the calculated maximum allowable headworks loading. In general, for ammonia, BOD_5, TSS, nitrogen, and phosphorus EPA guidance suggests that a local limit is necessary when the actual influent load exceeds 80% of the design load. Since the design loads for the treatment plant were not provided, this evaluation was not completed in the enclosed spreadsheet. In addition, I did not find any influent data for ammonia or nitrogen. Please provide this data along with the design loadings.

Please provide a response to the issues raised above. If you have any questions regarding this matter, please contact me at 215-814-5790.

Sincerely,

John Lovell
Pretreatment Coordinator
NPDES Permits and Enforcement (3WP41)
Water Protection Division

Enclosures

cc: Lee McDonnell, PADEP Southcentral Region (w/out enclosures)
Sean Furjanic, PADEP Central Office (w/out enclosures)

ALTOONA WATER AUTHORITY

July 26, 2011

Mr. John Lovell
Pretreatment Coordinator
EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Pretreatment Program Local Limits
NPDES Nos. PA0027014 and PA0027022

Dear Mr. Lovell,

With the Pennsylvania Department of Environmental Protection (DEP) ordering a ban on wastewater treatment facilities receiving natural gas and Marcellus shale drilling wastewaters, the Altoona Water Authority (AWA) wishes to remove the following parameters from the headworks evaluation and local limits consideration.

Aluminum
Iron (T)
Barium
Manganese
Sodium
Total Dissolved Solids
Beryllium
Magnesium
Strontium

The AWA was notified by the DEP Southcentral Office in April 2011 that if we continued to accept the wastewater, the biosolids program would be halted and the sludge produced at the wastewater treatment facilities considered a residual waste needing land filled.

If you have any questions, please call me at 814-949-2246 ext 2202.

Respectfully,

George C. Boliski
Environmental Services Manager

Wastewater Treatment
144 Westerly Treatment Plant Road • Duncansville, PA 16635 • phone: 814.949.2218 • fax: 814-949-0979
www.altoonawater.com

Easterly & Westerly WWTP Headworks Evaluations
George Boliski
to:
John Lovell
12/23/2010 11:54 AM
Show Details

History: This message has been replied to.

4 Attachments


Easterly Wastewater Treatment PA0027014.XLS


Westerly Phase 1.XLS


Westerly Headworks Eval 2012.xls


Easterly & Westerly Headworks Analysis 2010.xls

John,

Per out conversation, attached are the spreadsheets for the Easterly & Westerly WWTP Reevaluations.

If you have questions or need additional data, please do not hesitate to contact me.

George Boliski
Environmental Services Manager
Altoona Water Authority

Altoona Water Authority

Wastewater Treatment
144 Westerly Treatment Plant Road
Duncansville, PA 16635
phone: 814.949.2246
fax: 814.949.0979
www.altoonawater.com

December 23, 2010

CERTIFIED MAIL
RETURN RECIEPT REQUESTED
7008 0150 0003 1806 1101

Mr. Ramon D. Albizu
Environmental Scientist
Water Protection Division
US EPA , Region III
1650 Arch Street (3WP42
Philadelphia, PA 19103

RE: In the Matter of Altoona Water Authority, Easterly WWTP
Docket No. CWA-03-2010-0288

Dear Mr. Albizu,

As required by the Administrative Order, enclosed are the headworks analysis documents prepared to the best of my ability.

I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations

Respectfully,

George C. Boliski
Environmental Services Manager

cc: Alan R. Krier, Esq.
John Lovell, EPA, Region III

Altoona Water Authority

Wastewater Treatment
144 Westerly Treatment Plant Road
Duncansville, PA 16635
phone: 814.949.2246
fax: 814.949.0979
www.altoonawater.com

December 23, 2010

CERTIFIED MAIL
RETURN RECIEPT REQUESTED
7008 0150 0003 1806 1118

Mr. Ramon D. Albizu
Environmental Scientist
Water Protection Division
US EPA , Region III
1650 Arch Street (3WP42
Philadelphia, PA 19103

RE: In the Matter of Altoona Water Authority, Westerly WWTP
Docket No. CWA-03-2010-0293

Dear Mr. Albizu,

As required by the Administrative Order, enclosed are the headworks analysis documents prepared to the best of my ability.

I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations

Respectfully,

George C. Boliski
Environmental Services Manager

cc: Alan R. Krier, Esq.
John Lovell, EPA, Region III